

ECAT Computer Science Entry Test

Sr	Questions	Answers Choice
1	Question Image	A. 1.5 B. 1.2 C. 8 D. None of these
2	Question Image	A. 1 B. 2 C. 0 D. 4
3	The span of a standard parabola depends upon	A. x B. a C. y D. y ²
4	Question Image	
5	$nC_n - r$ is equal to	A. n! B. $n-1C_r$ C. nC_r D. None of these
6	Question Image	
7	Question Image	A. (-6,4) B. (-3,2) C. (6,-4) D. (3, -2)
8	If $-1 < x < 0$, which of the following statements must be true?	A. $x \text{ \< } x^2 \text{ \< } x^3$ B. $x \text{ \< } x^3 \text{ \< } x^2$ C. $x^2 \text{ \< } x^3 \text{ \< } x$ D. $x^2 \text{ \< } x \text{ \< } x^3$
9	Question Image	A. <i>π</i> B. <i>π</i> C. <i>π</i> D. <i>π</i>
10	If $x^4 - 10x^2 - 2x + 4$ is divided by $x + 3$, then the remainder is	A. 1 B. 0 C. 4 D. None of these
11	Question Image	
12	The corner point of the boundary lines, $x - 2y = 2$ and $2x + y = 2$ is:	A. (2,6) B. (6,2) C. (-2,2) D. (2,-2)
13	If $a = 2i + 2j$, $b = 3i - j$ and $c = 4i + 5j$, the $3b - a - 2c =$	A. $-i - 15j$ B. $i - 15j$ C. $i - 3j$ D. None of these
14	A circle drawn inside a triangle and touching its sides is called	A. In-circle B. Circum circle C. Escribed circle D. None of these
15	If $a_1 = 3$, $r = 2$, then the n th term of the G.P. is	A. $2 \cdot 3^{n-1}$ B. $3 \cdot 2^{n-1}$ C. $3 \cdot 2^{n+1}$ D. $3 \cdot 2^{n-1}$

16	The integral of $3x^5 dx$ is:	A. $15x^4$ B. $x^6/2$ C. $1/6x^5$ D. $x^5/\ln 3$
17	The domain of $f(x) = \log x$ is	A. $[0, \infty)$ B. $(0, \infty)$ C. $[0, \infty)$ D. $[-\infty, \infty)$
18	A fraction in which the degree of the numerator is less the degree of the denominator is called	A. Polynomial B. Proper fraction C. Rational fraction D. None
19	If $z_1 = 2 + 6i$ and $z_2 = 3 + 7i$ then which expression defines the product of z_1 and z_2	A. $36 + (-32)i$ B. $-36 + 32i$ C. $6 + (-11)i$ D. $0, +(-12)i$
20	If $f(x) = -x^2$ then $f(-2)$ is	A. -2 B. 2 C. -4 D. 4
21	If $y = 1/x^2$ then dy/dx equals:	A. $-2x$ B. x^{-3} C. $-2/x^3$ D. $-2x^3$
22	The maximum value of $Z = 3x + 4y$ subjected to the constraints $x + y \leq 40, x + 2y \leq 60, x \geq 0$ and $y \geq 0$ is	A. 120 B. 100 C. 140 D. 160
23	The decimal fraction in which we have finite number of digits in its decimal part is called.	A. recurring decimal fraction B. Non terminating fraction C. Non recurring fraction D. terminating decimal fraction
24	$x^2 + x - 6 = 0$ is a conditional equation and it is true for	A. 2, 3 B. 2, -3 C. -2, -3 D. -2, 3
25	The set $\{-1, 1\}$ is	A. Group under the multiplication B. Group under addition C. Does not form a group D. Contains no identity element
26	$(A \cup B) \cup C =$ -----	A. $A \cap B(B \cup C)$ B. $A \cup (B \cup C)$ C. $A \cup (B \cap C)$ D. None of these
27	The solution set of $x^2 - 5x + 6 = 0$ is	A. $\{1, 3\}$ B. $\{2, 3\}$ C. $\{1, 2\}$ D. None of these
28	If A is a non-singular matrix then adj A is	A. Non-singular B. Symmetric C. Singular D. Non defined
29	Question Image	A. 15/23 B. 7/15 C. 7/8 D. 15/7
30	Period of Sine and Cosine function is	A. π B. 2π C. $-\pi$ D. 2π

D. $-\frac{2}{\pi}$

31	Question Image	A. 1 B. $\frac{1}{2}$ C. 0 D. None
32	$\frac{d}{dx}(\cos x \sin x) =$	A. $\cos^2 x - \sin^2 x$ B. $2\cos^2 x + \sin^2 x$ C. $2\cos^2 x - \sin^2 x$ D. $1 - \sin^2 x$
33	A coin is tossed. If head comes up, a die is thrown but if tail comes up, the coin is tossed again. The probability of obtaining a head and an even number is	A. $\frac{1}{8}$ B. $\frac{2}{8}$ C. $\frac{3}{8}$ D. None of these
34	If $a=5j+2j, b=2i-3j$, then $ a+2b =$	A. $\sqrt{21}$ B. $\sqrt{97}$ C. $\sqrt{39}$ D. None of these
35	nC_2 exists when n is _____	
36	Question Image	A. 1, 2, 3 B. 1, 5, 9 C. 2, 5, 8 D. 3, 6, 9
37	The equation of the line perpendicular to x-axis and passing through (-5,3) is	A. $y-3=0$ B. $x+3=0$ C. $y-3=\infty$ D. $x+5=0$
38	How many term are there in the A.P, in which $a_1 = 11$, $a_n = 68$, $d=3$	A. 30 B. 27 C. 20 D. 21
39	(2, 1) is in the solution of the inequality	A. $2x + y > 7$ B. $x - y > 2$ C. $3x + 5y < 6$ D. $2x + y < 6$
40	Question Image	
41	If no two elements of ordered pairs of a function from A onto B are the same, then it is called	A. surjective B. injective C. bijective D. on to
42	The 31 term of the A.P 5,2,-1.....is	A. -82 B. 82 C. 85 D. -85
43	Question Image	
44	Domain of $\sec x$ is _____	
45	Question Image	
46	Question Image	A. a^{x-1} B. a^x C. $x \ln a$ D. $a^x \ln a$
47	$6! =$ _____	A. 360 B. 720 C. 6.5.4 D. None of these
48	The range of function $f(x)=-x^2+2x-1$ is	A. R B. $(-\infty, 0]$ C. $(-\infty, 1]$ D. $[0, \infty)$
49	Question Image	A. 8 B. 9 C. 10 D. 11
50	The sum of all even numbers less than 100 is	A. 2450 B. 2352 C. 2272 D. 2468

51	Question Image	
52	Which type of the matrix-has no inverse?	A. Square B. Adjoint C. Singular D. Non-singular
53	Which one is not defined $\forall n \in \mathbb{Z}^+$	A. $-n!$ B. $n!$ C. $(-n)!$ D. $n!+0!=n!+1$
54	Every relation, which can be represented by a linear equation in two variables, represents a	A. Relation B. Cartesian product C. Function D. Graph
55	The equation $x^2 + y^2 - 8x + 6y + 25 = 0$ represents	A. A circle B. A pair of straight lines C. A point D. None of these
56	The slope of the tangent of the circle $x^3 + y^3 = 25$ at (4,3) is:	A. $-4/5$ B. $4/3$ C. $-25/4$ D. $25/3$
57	If $f(x) = x^2$ then $f(0)$ is	A. 0 B. 1 C. 2 D. none of these
58	The negation of a number	A. a relation B. a function C. unary operation D. binary operation
59	$\forall a \in \mathbb{R} \exists o \in \mathbb{R}$ such that $a + v = 0 + a = a$ is property of	A. Commutative law of addition B. Associative law of addition C. Additive identity D. Additive inverse
60	The range of the principle cos function is	
61	$1+3x+6x^2+10x^3+....=$	A. $(1+x)^{-3}$ B. $(1-x)^{-2}$ C. $(1-x)^{-3}$ D. $(1+x)^{-2}$
62	Question Image	
63	Question Image	A. Diagonal matrix B. Scalar matrix C. Triangular matrix D. Identity matrix
64	$3x + 4 \geq 0$ is	A. equation B. inequality C. identity D. none of these
65	Question Image	A. z is purely imaginary B. a is any complex number C. z is real D. None of these
66	Question Image	A. range of f B. domain of f C. both (a) and (b) D. none of these
67	Express $\cos 320^\circ$ between 0° and 45°	A. $\cos 45^\circ$ B. $\cos 30^\circ$ C. $-\cos 40^\circ$ D. $\cos 40^\circ$
68	What is the period of $6 \sin x$?	A. π B. $-\pi$ C. $\pi/2$ D. 2π
69	Question Image	
70	The different of $\tan x$ is	A. $\sec^2 x$ B. $\ln \sec x $ C. $\sec^2 x dx$ D. $-\cos^2 x$

71	Question Image	A. 0 B. U C. $u/2$ D. $\log u$
72	Multiplicative inverse of 0 is	A. 0 B. 1 C. ± 1 D. Does not exist
73	Each complex cube root of unity is square of	A. itself B. 1 C. -1 D. the other
74	The gradient of a curve $Y = ax + b/x^2$ at (2,5) is 2. The value of a and b are.	A. 7,4 B. $7/3, 4/3$ C. 7,2 D. $7/3, 2/3$
75	$d/dx [\tan^2 x]$	A. $2 \tan x \sec^2 x$ B. $2 \tan x \sec x$ C. $2 \cot x \tan x$ D. $2 \sec^2 x \cos^2 x$
76	Inverse of the function $y = 10x$ is	A. $y = \log x$ B. $y = \ln x$ C. $x = 10y$ D. $x = 10y$
77	Question Image	
78	The points (a, 0), (0, b) and (3a, -2b) are:	A. Collinear B. Vertices of isosceles triangle C. corner of a right-angled triangle D. None of these
79	Question Image	
80	The graph of the quadratic equation is	A. Straight line B. Circle C. Parabola D. ellipse
81	If P is a proposition then its negative is denoted by	
82	If one root of the equation $ix^2 - 2(i+1)x + (2-i) = 0$ is $2-i$, then the other root is	A. -i B. $2+i$ C. i D. $2-i$
83	The equation of the circle with centre (-h, -k) and radius r is	A. $(x+h)^2 + (y+k)^2 = r^2$ B. $(x+h)^2 + (y-k)^2 = r^2$ C. $(x-h)^2 + (y+k)^2 = r^2$ D. $(x-h)^2 + (y-k)^2 = r^2$
84	A line segment whose end points lie on a circle is called the	A. Arc of the circle B. Centre of circle C. Chord of circle D. Radius of circle
85	Area of inscribed circle is	A. πR^2 B. πr^2 C. πr^2 D. πr^2
86	if $Z_1 = 1+i$, $Z_2 = 2+3i$, then $ Z_2 - Z_1 =$	A. $\sqrt{3}i$ B. $\sqrt{7}$ C. $-2-i$ D. $\sqrt{5}$
87	Question Image	C. 0 D. 1
88	If $e > 1$, then the conic, is:	A. Ellipse B. Parabola C. Hyperbola D. None of these
89	Question Image	A. a constant function B. linear function C. quadratic function D. none of these
90	Question Image	A. $9/4$ B. $4/9$ C. 1

D. None of these

91	Question Image	
92	The tangents drawn from the point P to a circle are imaginary if	A. P is on the circle B. P is inside the circle C. P is outside the circle D. none of these
93	Two quadratic equation in which xy term is missing and the coefficients of x^2 and y^2 are equal, give a linear equation by _____	A. Addition B. Subtraction C. Multiplication D. Division
94	Distance between A(3, 8), B(5, 6) is	
95	Question Image	A. A B. A' C. U D. U'
96	Question Image	A. (3, 1, -2) B. (3, -2, 1) C. (2, -1, 3) D. (-1, -2, -3)
97	Question Image	A. $\pi / 3$ B. $\pi / 4$ C. $\pi / 6$ D. 0
98	Question Image	A. The law of sines B. The law of cosines C. The law of tangents D. None of these
99	Solving the equation $x^2 + (a+b)x + ab = 0$ for gives:	A. $x = -a$, $x = b$ B. $x = a$, $x = -b$ C. $x = -a$, $x = -b$ D. $x = a$, $x = b$
100	The point lying on the terminal side of -270° is	A. (1,0) B. (0,-1) C. (0,1) D. (-1,0)
101	Question Image	A. $(a + b)c = a \cdot c + bc$ B. $a + b = b + a$ C. $(a + b) + c = a + (b + c)$ D. $a(b + c) = ab + ac$
102	The expansion $(1 + x)^{-3}$ holds when	A. $ x > 1$ B. $ x < 1$ C. $x < 1$ D. $x > 1$
103	Question Image	A. -8 B. 8 C. 8i D. 32
104	Let A, B and C be any sets such that $A \cup B = A \cup C$ and $A \cap B = A \cap C$ then	A. $A = B$ B. $B = C$ C. $A \neq C$ D. $A \neq B$
105	The central angle of an arc of a circle whose length is equal to the radius of the circle is called the	A. degree B. radian C. minute D. second
106	Question Image	A. $a \cos(ax + b) + c$ B. $-a \cos(ax + b) + c$
107	The ortho center of triangle whose vertices are (0,0)(3,0)(0,4) is	A. (0,0) B. (1,1) C. (2,2) D. (3,3)
108	The largest possible domain of the function: $y = \sqrt{x}$ is:	A. $(0, \infty)$ B. 12 C. $(3, 12)$ D. $(3, \infty)$
109	The equation of vertical asymptotes of $y = \sec x$ is	A. $x = 0$ B. $y = 0$ C. $x = \infty$ D. $y = \infty$

110	The foot of perpendicular from (α, β, γ) only y-axis is	A. $(-\frac{\alpha\gamma}{\beta}, 0, 0)$ B. $(0, -\frac{\beta\gamma}{\alpha}, 0)$ C. $(0, 0, -\frac{\alpha\beta}{\gamma})$ D. $(0, 0, 0)$
111	Question Image	A. 0 C. 1
112	If $f(x) = c$ then $f^{-1}(x)$ equals:	A. 1 B. 0 C. cx D. c
113	In set builder notation the set $\{0, 1, 2, \dots, 100\}$ can be written as	
114	A square matrix $A = [a_{ij}]$ is upper triangular when	A. $c_{ij} = 0$ B. $b_{ij} = 0$ C. $a_{ij} = 0$ for all $i > j$ D. $d_{ij} = 0$
115	Through how many radians does the minute hand of a clock turn in one hour	
116	Matrices are represented by	A. Natural numbers B. Real numbers C. Small letters D. Capital letters
117	The second degree equation of the form $Ax^2 + By^2 + Gx + Fy + C = 0$ represent hyperbola if	A. $A = B \neq 0$ B. $A \neq B$ and both are of same sign C. $A \neq B$ both are of opposite sign D. Either $A = 0$ or $B = 0$
118	The equation $ x + 4 = x$ has solution	A. $x = -2$ B. $x = 2$ C. $x = -4$ D. $x = 4$
119	If x, y are two -ve distinct numbers then	A. $A > G > H$ B. $A < G < H$ C. $A = G = H$ D. None of these
120	Shifting origin to $(-3, 2)$, the new coordinate of $(-2, 6)$ are:	A. $(1, 4)$ B. $(2, 4)$ C. $(-1, 3)$ D. $(-1, 4)$
121	Differentiate the expression $(x-1)(x+2)^2$ with respect to x gives	A. $2x(x+2)$ B. $2(x-1)(x+2)$ C. $2(x+1)$ D. $3x(x+2)$
122	$\{1, 2, 3\}$ is _____	A. an infinite set B. A finite set C. A singleton set D. Universal set
123	Question Image	
124	Question Image	
125	The disjunction of two statements p and q , is denoted symbolically as	
126	Question Image	
127	Five engineering, four mathematics, two chemistry books are placed on a table at random. The probability that the books of each kind are all together is	
128	$\sin(2\sin^{-1}0.8)$	A. 0.56 B. 0.69 C. -0.16 D. 0.96
129	The product of complex numbers (a, b) and (c, d) is	A. (ac, bd) B. $(ac-bd, ad+bc)$ C. (ab, cd) D. $(ad-bc, ac+bd)$

130	Question Image	
131	Question Image	A. l^3 B. rl^3 C. r D. none
132	Question Image	A. 0 B. 20 C. 90 D. 80
133	In quadratic equation, if the replacement of y with -y leaves the equation unchanged, then the graph is	A. Straight line B. Circle C. Hyperbola D. Symmetric w.r.t. 0
134	$45^\circ =$ _____	
135	Question Image	
136	Question Image	A. $\frac{1}{3}$ B. 1 C. 3 D. None of these
137	$(a+bi) - (c+di) =$	A. $(a+b) = (c+d)$ B. $(a+c) + i(b+d)$ C. $(a - c) + (c - d)i$ D. $(a - c) + (b - d)i$
138	Question Image	A. $a \sec(ax + b) + c$ B. $-a \sec(ax + b) + c$
139	Question Image	
140	If the sum of co-efficient in the expansion of $(a+b)^n$ is 4096, then the greatest co-efficient in the expansion is	A. 1594 B. 792 C. 924 D. 2924
141	The roots of $(b-c)x^2 + (c-a)x + a-b = 0$ are equal if	A. $2b = a+c$ B. $2a = b+c$ C. $2c = a+b$ D. $a + b + c = 0$
142	Vector $\hat{j} =$	A. $[1,0]$ B. $[0,1,0]$ C. $[0,0,1]$ D. None of these
143	The 5th and 13th terms of an A.P are 5 and -3 respectively. The first term of the A.P is	A. 1 B. -15 C. 9 D. 2
144	If the graph of f is entirely below the x-axis, then the value of definite integral is	A. $= 0$ B. < 0 C. > 0 D. None
145	Question Image	
146	Question Image	D. none of these
147	$0! =$ _____	A. 0 B. 1 C. 2 D. Not defined
148	The coordinates of the point that divides the join of A(-6,3) and B(5, -2) in the ratio 2:3 externally are	
149	A square matrix all of whose elements except the main diagonal are zeros is called a	A. Null matrix B. Singular matrix C. Symmetric matrix D. Diagonal matrix
150	$x = r \cos \theta, y = r \sin \theta$ are the parametric equations of	A. Circle B. Ellipse C. Parabola D. Hyperbola
		A. $a = 4, b = 1$ B. $a = 1, b = 4$

151	Question Image	D. $a = 1, b = -4$ C. $a = 0, b = 4$ D. $a = 2, b = 4$
152	Question Image	
153	Which of the following is a vector.	A. energy B. force C. work D. power
154	Question Image	A. x-axis B. y-axis C. z-axis D. None of these
155	The multiplicative inverse of 0 is	A. 1 B. -1 C. 0 D. Does not exist
156	Question Image	
157	If you are looking a bird in the tree from the ground then the angle formed is called angle of_____;	A. Elevation B. Depression C. Right angle D. None of these
158	If $z = (x,y)$, then $\bar{z} =$	A. $(-x,y)$ B. $(x,-y)$ C. $(-x, -y)$ D. None of these
159	The sum of the odd coefficients in the expansion of $(a + x)^4$ is	A. 14 B. 12 C. 8 D. 4
160	6 is	A. A prime integar B. An irrational number C. A rational number D. An odd integer
161	$1^0 =$ _____	A. 360' B. 60" C. 60' D. 3600'
162	The area of circle of unit radius =	A. 0 B. 1 C. 4 D. π
163	Matrices $A = [a_{ij}] 2 \times 3$ and $B = [b_{ij}] 3 \times 2$ are suitable for	A. BA B. A^2 C. AB D. B^2
164	Question Image	
165	Question Image	
166	Question Image	
167	The positive integer just greater than $(1+0.0001)^{10000}$ is	A. 4 B. 5 C. 2 D. 3
168	Question Image	
169	If $B \subseteq A$, then complement of B in A is = -----	A. A-B B. $A \cap B$ C. B-A D. $A \cup B$
170	If a plane passes through the vertex of the cone, then the intersection is	A. an ellipse B. a parabola C. a hyperbola D. a point circle
171	$\int \sec^2(ax + b) dx$ is equal to:	A. $\tan^2(ax + b)$ B. $\frac{1}{a} \tan^2(ax + b)$ C. $\frac{1}{a} \tan(ax + b)$ D. $\tan(ax + b)$
172	Question Image	

172	Question Image	
173	The third term in the expansion of $(1+2x)$ is	A. $-2x^2$ B. $-4x^2$ C. $2x^2$ D. $4x^2$
174	Question Image	A. conclusion B. consequent C. hypothesis D. conditional
175	Question Image	
176	The general term of a sequence is denoted by	A. $a_{1</sub>}$ B. $a_{n</sub>}$ C. n D. $s_{n</sub>}$
177	$\neg p$ is the	A. Implication of p B. disjunction of p C. negation of p D. conjunction of p
178	Additive inverse of $-a - b$ is	A. a B. $-a + b$ C. $a - b$ D. $a + b$
179	Domain of $\tan x$ is _____	
180	If n is any positive integer ,t hen $2+4+6+.....+2n=$	A. $2^{n</sup>-1}$ B. $2^{n</sup>+1}$ C. $n^{2</sup>+1}$ D. $n(n+1)$
181	If a, b, c are the measures of the sides of a triangle then	
182	Question Image	
183	A relation in which the equality is true only for some values of the unknown is called	A. An identity B. An equation C. A polynomial D. None
184	Question Image	
185	Question Image	A. 16 B. 256 C. 64 D. 1024
186	If $a, b = 0$ then	A. $a \parallel b$ B. $a \perp b$ C. $a = b$ D. None
187	What is the number of elements of the power set of $\{ \}$	A. 0 B. 1 C. 2 D. 3
188	A triangle which is not right angle is called _____ triangle	A. acute B. Obtuse C. Right D. Oblique
189	Name the property used in $1000 \times 1 = 1000$	A. additive inverse B. multiplicative inverse C. additive identity D. multiplicative identity
190	Question Image	A. Principle of equality of fractions B. Rule for product of fractions C. Golden rule for fractions D. Rule for quotient of fractions
191	The distance between the points $(0,0)$ and (x,y) is	A. $x^{2</sup>+ y^{2</sup>}$ B. x C. y
192	In set builder notation the set $\{0,1,2,.....100\}$ can be written as	A. $\{x / x \in B \wedge x \leq 100\}$ B. $\{x / x \in W \wedge x \leq 101\}$ C. $\{x / x \in Z \wedge x \leq 101\}$ D. The set of first 100 whole numbers A. Symmetric w.r.t.v-axis

193	In quadratic equation $y=ax^3+bx+c$, if b and c are both zero then the graph is	B. Symmetric w.r.t. x-axis C. Straight Line D. Circle
194	Question Image	A. 2 b B. 2 a C. 2 ab D. a + b
195	If $a > b$ or $a < b$ then $a = b$ is a	A. Additive property B. Transitive property C. Trichotomy property of inequality
196	Question Image	
197	Question Image	
198	The point of concurrency of the angle bisectors of a triangle is called	A. incentre B. circumcentre C. e-centre D. centroid
199	Every set is an improper subset of	A. Empty set B. Equivalent set C. Itself D. Singleton set
200	The distance of the point (2,3) from x-axis is	A. 2 B. 3 C. 5
201	Total number of subsets that can be formed out of the set {a,b,c} is	A. 1 B. 4 C. 8 D. 12
202	A and B throw a dice. The probability that A's throw is not greater than B's is	A. 5 / 12 B. 7 / 12 C. 1 / 6 D. 1 / 2
203	If the circle $x^2 + y^2 + 2gx + 2fy + c = 0$ passes through the origin then	A. $c = 0$ B. $c = -1$ C. $c = -2$ D. $c = 1$
204	The domain of an infinite sequence is a	A. Set of natural numbers B. R C. Subset of N D. None of the above
205	The graph of a quadratic function is	A. Circle B. Straight line C. Parabola D. Triangle
206	Question Image	A. 0 B. 2 C. 4/3 D. 5/3
207	If α, β are non-real roots of $ax^2 + bx + c = 0$ ($a, b, c \in \mathbb{Q}$), then	A. $\alpha = \beta$ B. $\alpha\beta = 1$ C. $\alpha = \beta$ D. $\alpha = 1$
208	Question Image	A. $5x^4 + c$ B. $\frac{1}{6} x^6 + c$ C. $5x^2 + c$ D. $\frac{1}{5} x^6 + c$
209	The roots of $px^2 - (p-q)x - q = 0$ are	A. equal B. Irrational C. Rational D. Imaginary
210	The set of real roots of the equation $\log_{(5x+4)}(2x+3)^3 - \log_{(2x+3)}(10x^2+23x+12) = 1$ is	A. {-1} B. {-3/5} C. Empty set D. {-1/3}
211	Question Image	
212	9. 8. 7. 6= _____	
213	The identity elements with respect to	A. 0 B. 1

	subtraction is	C. -1 D. Does not exist
214	The parametric equation of a curve are $x = t^2$, $y = t^3$ then	
215	Question Image	
216	Question Image	
217	Question Image	A. 16 / 7 B. 6 / 17 C. 7 / 16 D. None of these
218	Question Image	
219	Question Image	
220	What is the 26th term of the sequence, if its general term is $a_n = (-1)^{n+1}$	A. 2 B. 26 C. 27 D. 1
221	If the roots of $ax^2 + bx + c = 0$ ($a > 0$) be greater than unity, then	A. $a + b + c = 0$ B. $a + b + c > 0$ C. $a + b + c < 0$ D. None of these
222	There are _____ types of rational fraction	A. Three B. Four C. Five D. Two
223	5th term of a G.P. is 2, then the product of first 9 terms is	A. 256 B. 128 C. 512 D. None of these
224	Question Image	
225	The curve $f(x,y) = 0$ has a central symmetry if	A. $f(-x,-y) = f(x,y)$ B. $f(x,-y) = f(x,y)$ C. $f(-x,y) = f(x,y)$ D. $f(-x,-y) \neq f(x,y)$
226	The angle of depression of a point situated at a distance of 70 meters from the base of a tower is 45° . The height of the tower is	A. 70 m B. 85 m C. 35 m D. None of these
227	The probability that a slip of number divisible by 4 is picked from the slips bearing numbers 1, 2, 3, ...10 is	A. 1/5 B. 1/4 C. 1/3 D. 1/2
228	The general term of the A.P. is	A. $a + (n - 1) d$ B. $n + (a - 1) d$ C. $d + (n - 1) a$ D. None of these
229	Question Image	
230	If $\cos(2 \sin^{-1} x) = 1/9$, then what is the value of x?	A. 1/3 B. -2/3 C. 2/3 D. 2/3, -2/3
231	The 10th common term between the series $3+7+11+\dots$ and $1+6+11+\dots$ is	A. 191 B. 193 C. 211 D. None of these
232	Question Image	A. y/x B. x/y C. y/z D. None
233	Φ set is the _____ of all sets?	A. Subset B. Union C. Universal D. Intersection
234	The set $\{a,b\}$ is	A. Infinite set B. Singleton set C. Two points set D. None

235	How many 6-Digit number can be formed without repeating any digit from the digits 0,1,2,3,4,5	A. 720 B. 600 C. 120 D. 6-5!
236	Question Image	A. 1 B. 2 C. -1 D. 0
237	If no two elements of ordered pair of a function from A into B are equal, then it is called	A. surjective B. injective C. bijective D. on to
238	Question Image	D. none of these
239	What is the conjugate of $-6 - i$?	A. $-6 + i$ B. $6 + i$ C. $-6 - i$ D. $6 - i$
240	Range of $3 \sin x$ is _____	A. $[-3, 3]$ B. $[-1, 1]$ C. R D. None of these
241	If sides of $\triangle ABC$ are 16, 20, and 33, then the value of the greatest angle is	A. $150^\circ 20'$ B. $132^\circ 35'$ C. $101^\circ 25'$ D. $160^\circ 50'$
242	The order of the matrix A is 3×5 and that of B is 2×3 . The order of the matrix BA is	A. 2×3 B. 3×2 C. 2×5 D. 5×2
243	AB is a vertical pole and C is its middle point. The end A is on the level ground and P is any point on the level ground other than A. the portion CB subtends an angle β at P. If $AP : AB = 2 : 1$ then $\beta =$	
244	Two tangents drawn from (2,3) to the circle $x^2 + y^2 = 9$ are	A. Real and distinct B. Imaginary C. Real and coincident D. None of these
245	The conic is a parabola if	A. $e < 1$ B. $e > 1$ C. $e = 1$ D. None of these
246	If $A \subseteq B$, and B is a finite set, then	A. $n(A) < n(B)$ B. $n(B) < n(A)$ C. $n(A) \leq n(B)$ D. $n(A) \geq n(B)$
247	If A is a set then any subset R of $A \times A$ is called	A. relation on A B. relation on B C. relation from A to B D. relation from B to A
248	$1^0 =$ _____	
249	Which of the following represent injective function	
250	Which conjunction is not true ?	
251	Question Image	
252	If A is non-empty set, any subset of $A \times A$ is called a relation in a	A. A B. B C. D D. r
253	To express a single rational fraction as a sum of two or more single rational fractions which are called	A. improper fractions B. Partial fractions C. mixed form D. Polynomials
254	Question Image	

A. $a^{_j} = a^{_j}$

255	Two matrices $A = [a_{ij}]$ and $B = [b_{ij}]$, and $[b_{ij}]$ are equal iff	B. $a_{ij} = b_{ij}$ C. $a_{if} = b_{ij}$ D. $b_{ij} = b_{ji}$
256	The period of $\cos(7x-5)$ is	A. $\pi/7$ B. $7\pi/2$ C. $\pi/2$ D. $2\pi/7$
257	The value of x for which the polynomials $x^2 - 1$ and $x^2 - 2x + 1$ vanish simultaneously is	A. 2 B. 1 C. -1 D. -2
258	The square matrix A is skew Hermitian when $(A)^t =$	A. A B. A' C. $-A$ D. A
259	What is the value of $\cos(\cos^{-1} 2)$?	A. $\sqrt{2}$ B. $1/2$ C. undefined D. 0
260	The angle AOP which the ray from an observer's eye at O to an object at P at a lower level makes with horizontal ray OA through O is called the	A. Angle of depression B. Angle of elevation C. Acute angle D. Obtuse angle
261	If $f(x)$ is defined and continuous then $f(x)$ is always	A. Rational function B. Trigonometric function C. Logarithmic function D. All are correct
262		
263		A. $1/8$ B. $1/2$ C. $1/4$ D. $1/6$
264	There will be no inverse if the function is	A. one-to-one B. One-to-many C. onto D. into
265	$\sin(\pi + \theta) =$ _____;	A. $\sin \theta$ B. $\cos \theta$ C. $-\sin \theta$ D. $-\cos \theta$
266	In $\mathbb{R}$, the multiplicative identity is	A. 0 B. 1 C. -1 D. None
267	A rule or correspondence that assigns to each element x in X a unique element y in Y is called a function from	A. X to X B. X to Y C. Y to X D. none of these
268	If $f(x) = x^2$ then $f(2)$ is	A. -2 B. 2 C. 4 D. -4
269	If $y = e^{ax} \sin bx$ and $y^2 - 2ay + (a^2 + b^2)y = 0$ then for what values of a and b we have $y^2 + 10y + 34y = 0$	A. $a = -10, b = 34$ B. $a = -5, b = 3$ C. $a = 5, b = 3$ D. $a = 10, b = 34$
270		A. Additive property in $\mathbb{R}$ B. Multiplication property in $\mathbb{R}$ C. Cancellation property in $\mathbb{R}$ D. Distribution property in $\mathbb{R}$
271	$\sin(\sin^{-1}(1/2)) =$	A. 0 B. 2 C. ∞ D. $1/2$
272		
273	If n is not a natural number, then the expansion $(1+x)^n$ is valid for	
274		A. 2 B. 7

274	Question Image	C. 8 D. 12
275	Considering Cosine Rule of any triangle ABC, possible measures of angle A includes	A. Angle A is obtuse B. Angle A is acute C. Angle A is right-angle D. All of above
276	The set of whole numbers is subset of	A. The set on integers B. The set of natural numbers C. {1, 3, 5, 7,} D. The set of prime numbers
277	Question Image	
278	$(a, b) + (-a, -b) =$	A. (0,0) B. (a, b) C. (-a, -b) D. (1, 1)
279	If p and q are two statements then their conjunction is denoted by	
280	The proposition S(n) for any $n \in \mathbb{N}$ is only true if $k \in \mathbb{N}$ and	A. S(k +1) is true B. S(1) is true and S(k+1) is true whenever S (k) is true C. S(k+1) is true whenever S (k) is true D. S(k) is true
281	For all positive integral value of n, $3^n < n!$, when	A. $n \geq 6$ B. $n \leq 6$ C. $n \leq 11$ D. $n \geq 11$
282	Question Image	
283	Question Image	
284	Question Image	A. The law of cosines B. The law of sines C. The law of tangents D. None of these
285	$i^3 =$	A. -1 B. i C. -i D. 1
286	Question Image	
287	Let the equation $ax^2 - bx + c = 0$ have distinct real roots both lying in the open interval (0, 1) where a, b, c are given to be positive integers. Then the value of the ordered triplet (a, b, c) can be	A. (5, 3, 1) B. (4, 3, 2) C. (5, 5, 1) D. (6, 4, 1)
288	The set $\{E, 0\}$, is closed under (ordinary)	A. multiplication B. addition C. subtraction D. division
289	Question Image	A. 0 B. -2 C. 1 D. 4
290	Question Image	D. None of these
291	In polar form of complex number $r =$	
292	The common point to four standard parabolas	A. Focus B. Centre C. Vertex D. P(x,y)
293	The domain of the principle sine function is	
294	The centre fo the circle $x^2 + y^2 + 12x - 10 = 0$ is	A. (12, -10) B. (6, -5) C. (-12, 10) D. (-6, 5)
295	Question Image	D. none of these
296	The discriminant of the quadratic equation $ax^2 + bx + c = 0$ is	A. $b^2 - 4ac$ B. $b^2 - 4ac$ C. $4ac - b^2$ D. $a^2 - b^2 - 4ac$

297	For the equation $ x^2 + x - 6 = 0$, the roots are	A. One and only one real number B. Real with sum one C. Real with sum zero D. Real with product zero
298	Question Image	A. Symmetric property B. Cancellation property w.r.t. multiplication C. Reflexive property D. Transitive property
299	An unbiased die is thrown. Then the probability of getting a prime is	A. 1/2 B. 2/3 C. 3/4 D. None of these
300	Question Image	
301	Question Image	A. 3/8 B. 7/8 C. 1/8 D. None
302	The directrix of $y^2 = -4ax$ is	A. $y = -a$ B. $y = a$ C. $x = a$ D. $x = -a$
303	The period of the function $\csc x/4$ is	A. $4x$ B. $\pi/4$ C. 8π D. $\pi/8$
304	The set $\{-1, 1\}$ is closed under the binary operation of	A. Addition B. Multiplication C. Subtraction D. Division
305	If the cone is cut by a plane perpendicular to the axis of the cone, then the section is a	A. circle B. ellipse C. hyperbola D. parabola
306	The $\sqrt{}$ is used for the	A. Positive square root B. Negative square root C. +ve and -ve square root D. Whole number
307	There is no element common in	A. N and W B. E and W C. N and O D. Q and Q'
308	Question Image	A. direction ratios B. direction cosines C. direction angles D. none of these
309	Question Image	A. $2x$ B. $x/2$ C. $2x^{3/2}$ D. $x^{3/2}$
310	(a,b) (c,d) if and only if	A. $a = b$ and $c = d$ B. $a = d$ and $b = c$ C. $a = c$ and $b = d$ D. $a - b = c - d$
311	Question Image	B. 1 D. -1
312	probability of a certain event is	A. 0 B. -1 C. 1 D. ∞
313	The unit vector along z-axis is	D. none of these
314	If origin is the mid point of $(a,3)$ and $(5,b)$ then	A. $a = -5$, $b = -3$ B. $a = 5$, $b = 3$ C. $a = -5$, $b = 3$ D. $a = 5$, $b = -3$
315	If $y = (7x + 9)^2$, then dy/dx equals:	A. $98x + 126$ B. $14x$ C. $14x + 18$ D. $14x + 81$

316	$(0.90)^{1/2}$ is equal to	A. 0.99 B. 0.90 C. 0.80 D. 0.88
317	Latus rectum = 4 x _____	A. focal distance of the vertex B. Chord C. Focus D. 1/2
318	Which of the following is a scalar	A. displacement B. velocity C. acceleration D. density
319	The value of $\sin^2 20^\circ + \sin^2 70^\circ$ is equal to	A. 1 B. 2 C. -1 D. 1/2
320	For any integer k, $w^n =$ _____ when $n = 3k$	A. 1 B. 2 C. 0 D. -4
321	If $x > 0$ and $y < 0$, then $\cos \theta$	A. Positive B. negative C. zero D. infinity
322		
323		D. none of these
324	a chord passing through the focus of a parabola is called a:	A. Focal chord B. Latus rectum C. Tangent D. Directrix
325		A. $a = 2, b = 3$ B. $a = 3, b = 2$ C. $a = 2, b = 1, 2$ D. $a = 3, b = 3$
326	Second derivative of $y = x^9 + 10x^2 + 2x - 1$ at $x = 0$ is	A. 10 B. 20 C. 12 D. 1
327	Which of the following points is a point of intersection of the curve $x + y = 8$ and the straight line $2x - y = 2$.	A. -2, -2 B. 2, 2 C. 0.4, 2.8 D. 0, 1
328	$a \cdot a^{-1} = a^{-1} \cdot a = 1$ is a	A. Commutative law of multiplication B. Multiplication identity C. Associative law of multiplication D. Multiplication inverse
329	$x =$ _____ is in the solution of $2x - 3 < 0$	A. 2 B. -2 C. 3 D. 4
330		A. Principle of equality of fractions B. Rule for product of fraction C. Rule for quotient of fraction
331		
332		A. 3K B. K2 C. K3 D. K
333	The set of all points in the plane that are equally distant from a fixed point is called a	A. Parabola B. ellipse C. Hyperbola D. Circle
334	For $f(x) = x^2 + px + 1$, if $f(3) = 3$ then $P =$	A. 3/7 B. -2/5 C. -7/5 D. -7/3
335		

A. circular system

336	The system of measurement in which the angle is measured in radians is called the	B. CGS system C. sexagesimal system D. none of these
337		A. A B. A' C. U D. None of these
338		D. none of these
339		
340	The coordinates of a point P(x,y) referred to XY-system are	A. (x+y,y+k) B. (x-h,y-k) C. (x,y) D. (x-h,y-k)
341	Decimal part of irrational number is	A. Terminating B. Repeating only C. Neither repeating nor terminating D. Repeating and terminating
342	The line $y = 4x + c$ touches the hyperbola $x^2 - y^2 = 1$ if and only if	A. $c = \pm\sqrt{2}$ B. $c = 0$ C. $c = \pm\sqrt{17}$ D. $c = \pm\sqrt{15}$
343	Product of any n consecutive positive integers is divisible by	A. n B. $\sqrt{n}$ C. n! D. None
344	A non-terminating non_recurring decimal represents an	A. Irrational no B. Both a & c C. Rational no D. None of these
345		A. Conclusion B. Implication C. Antecedent D. Hypothesis
346		
347	The set of second elements of the ordered pairs forming a relation is called a	A. Domain B. range C. function D. relation
348		A. $4(x^3 - 3x^2)^3 + c$ B. $3x^2 - 6x + c$
349		
350		A. A prime number B. An integer C. A whole number D. An irrational number
351		A. Natural numbers B. Whole numbers C. Integers D. Rational numbers
352	Arithmetic mean between $x - 3$ and $x + 5$ is	A. $x + 1$ B. $x + 2$ C. $x + 3$ D. $x + 4$
353	If n is any positive integer then $n^2 > n + 3$ for	
354	An observer on the top of a cliff 200 m above the sea level, observes the angles of depression of two ships on opposite sides of the cliff to be 45° and 30° , respectively. The distance between the ships if the line joining them points to the base of cliff is	
355	The 26th term of the A.P -2,-4,10,.....is	A. 136 B. -136 C. 148 D. -148
356		A. 15 B. 15 i C. -15 i D. -15

357	The sixth term of the sequence 1,3,12,60....is	A. 1500 B. 72 C. 2160 D. 2520
358	Question Image	
359	Question Image	A. 1777 B. 223 C. 257
360	Which is an explicit function	A. $y = x^{2/3} + 2x - 1$ B. $x^{2/3} + xy + y^{2/3} = 2$ C. $x^{2/3} + y^{2/3} = xy + 2$ D. All are
361	What is the circular measure of the angle between the hands of a watch at 4 O'clock	
362	The line through the intersection of the lines $x + 2y + 3 = 0$: $3x + 4y + 7 = 0$ and making equal intercepts on the axes is	A. $x + y + 1 = 0$ B. $x + y - 2 = 0$ C. $x + y + 2 = 0$ D. $2x + y + 2 = 0$
363	Question Image	
364	Minor of an element a_{ij} is denoted by	A. M_{ij} B. A_{ij} C. $ A $ D. None of these
365	Question Image	D. none of these
366	If (2,0) is the vertex and y-axis is directrix of parabola then focus is	A. (2,0) B. (-2,0) C. (4,0) D. (-4,0)
367	$x = \underline{\hspace{2cm}}$ is in the solution of $2x + 3 \geq 0$	A. 1 B. -2 C. -3 D. -4
368	The distance s of a particle in time t is given by $s = t^3 - 6t^2 - 4t - 8$. Its acceleration vanishes at $t =$	A. 1 B. 2 C. 3 D. 4
369	The negative square root of 9 can be written as:	A. $-\sqrt{9}$ B. $\sqrt{9}$ C. $\sqrt{18}$ D. $-\sqrt{18}$
370	Question Image	
371	Question Image	A. 0 B. 1 C. -2 D. 10
372	To study conics, Pappus used the method of	A. analytic geometry B. solid geometry C. Euclidean geometry D. none of these
373	Question Image	A. 0 B. 1 C. 2 D. 3
374	If n is a negative integer $n!$ is	A. 1 B. 0 C. Unique D. Not defined
375	Question Image	A. $x^{3/2}$ B. $3x^{2/3}$ C. $3x$ D. 3
376	The square root of $2i - 20i$ is	A. $\pm(5 - 2i)$ B. $\pm(5 + 2i)$ C. $(5 - 2i)$ D. None of these
		A. (2 , 4) B. (2 , 2) C. (2 , 1) D. (2 , 0)

377	Co-ordinate of a point on the parabola $y^2 = 8x$ whose focal distance is 4 are:	B. (-2, -4) C. (-2, 4) D. (2, -4)
378	Question Image	
379	The set R is _____ w.r.t subtraction	A. Not a group B. A group C. No conclusion drawn D. Non commutative group
380	An infinite sequence has no	A. nth term B. Last term C. Sum D. None of these
381	$(a^{-1})^{-1} =$	A. $a^{\sup>-1\sup>}$ B. a C. -a D. None of above
382	If a particle moves according to the law $s = t^3 - t^2$, then its velocity at time $t = 1.5$ is	A. 9/2 B. 15/4 C. 5 D. None
383	If the st. line $3x + 4y = K$ touches the circle $x^2 + y^2 - 10x = 0$ then the value of K is	A. -1 or 20 B. -10 or 40 C. -2 or 20 D. 2 or 20
384	The points (0,-1), (2,1), (0,3) and (-2,1) are the corner of:	A. Square B. rhombus C. Parallelogram D. rectangel
385	Question Image	A. Scalar matrix B. Identity matrix C. Null matrix D. Symmetric matrix
386	Question Image	
387	If S and P are the sum and the product of roots of a quadratic equation, then the quadratic equation is	A. $x^{\sup>2\sup>} + Sx - P = 0$ B. $x^{\sup>2\sup>} - Sx + P = 0$ C. $x^{\sup>2\sup>} - Sx - P = 0$ D. $X^{\sup>2\sup>} + Sx + P = 0$
388	Domain of $\cot x$ is _____	
389	The parametric equations of a circle are	
390	Cycle tyres are supplied in lots of 10 and there is a chance if 1 in 500 tyres to be defective. Using Poisson distribution, the approximate number of lots containing no defective tyre in a consignment of 10, 0000 lots is	A. 9028 B. 9208 C. 9802 D. 9820
391	The eccentricity e of an ellipse is always	A. Rational B. Real C. Irrational D. Integer
392	If a_1 and r are the first term and the common ratio respectively then $(n + 1)$ th term of the G.P. is	A. 0 B. $a^{\sub>1\sub>}r^{\sup>n\sup>}$ C. $a^{\sub>1\sub>}r^{\sup>n+1\sup>}$ D. $a^{\sub>1\sub>}r^{\sup>n\sup>}$
393	Deductive logic in which every statement is regarded as true or false and there is no other possibility is called:	A. Deductive logic B. Inductive logic C. Aristotlian logic D. Non-Aristotlian logic
394	Question Image	
395	Sand falls from a tube in such a way that it forms a cone whose height is always 4/3 times the radius of its base and radius of the base increases at the rate of 1/8 cm/sec. When this radius is 1 meter, the rate at which the amount of sand increases is	
396	Question Image	A. mx B. x/m C. $mx^{\sup>m-1\sup>}$ D. $xm^{\sup>m-1\sup>}$
		A. quadratic function B. constant function

397	Question Image	B. constant function C. trigonometric function D. linear function
398	The value of k ($k > 0$) for which the equation $x^2 + kx + 64 = 0$ and $x^2 - 8x + k = 0$ both will have real roots is	A. 8 B. -16 C. -64 D. 16
399	If $3x^4 + 4x^3 + 5x$ is divided by $x+1$, which of the following is the remainder	A. 7 B. -2 C. 6 D. 1
400	An integer is chosen at random from the number ranging from 1 to 50. the probability that the integer chosen is a multiple of 2 or 3 or 10 is	A. $\frac{3}{10}$ B. $\frac{5}{10}$ C. $\frac{7}{10}$ D. $\frac{9}{10}$
401	Question Image	
402	Question Image	
403	Period of $3 \sin x$ is _____	
404	The point where the axis meets the parabola is called	A. Directrix B. Focu C. Chord D. Vertex
405	$\tan 30^\circ =$ _____	
406	The period of $\tan [x/3]$ is _____	A. 2π B. 4π C. 3π D. 5π
407	If the intersection of two sets is non-empty, but either is a subset of other are called	A. Disjoint sets B. Over lapping C. Equal sets D. None of these
408	The fixed point which lies on the axis of the cone is called its	A. axis B. apex C. nappes D. axis
409	Question Image	
410	Question Image	A. Null matrix B. Triangular matrix C. Unit matrix D. Rectangular matrix
411	If $\sin A = \sin B$, $\cos A = \cos B$, then the value of A in terms of B is	
412	Question Image	
413	Arithmetic mean between a and b is	
414	A and B be two square matrices and if their inverse exist the $(AB)^{-1} =$	A. $A^{-1} B^{-1}$ B. AB^{-1} C. $A^{-1}B$ D. $B^{-1}A^{-1}$
415	Question Image	
416	If $a > 0, b > 0, c > 0$ then the roots of the equation $ax^2 + bx + c = 0$ are	A. Real and negative B. Non-real with negative real parts C. Real and positive D. Nothing can be said
417	If $a = [1, 4, 3]$ and $B = [2, -1, 5]$ athen the mid point M of AB is:	A. $[1, 1, 1.5]$ B. $[2, 2, 1.5]$ C. $[1.5, 1.5, 4]$ D. None of these
418	The point _____ is in the solution of the inequality $2x - 3y < 4$	A. (0, -2) B. (1, -3) C. (2, 2) D. (3, 0)

419	Four cards are drawn at random from a pack of 52 playing cards. The probability of getting all the four cars of the same suit is	A. 44/4165 B. 22/4165 C. 11/4165 D. None of these
420	Question Image	A. (1, 3) B. (-1, -3) C. (1, -3) D. (-1, 3)
421	Which of the following has the same value as i^{113}	A. i B. -1 C. -i D. 1
422	If 2 and 2 are x and y components of vector then its angle with x-axis is	A. 30° B. 45° C. 60° D. 90°
423	Question Image	
424	Question Image	
425	Question Image	A. -1 B. 0 C. 1 D. Undefined
426	$\tan 360^\circ =$ _____	A. -1 B. 0 C. 1 D. Undefined
427	If S is a sample space and event set $E = S$ then $P(E)$ is	A. ≥ 0 B. 1 C. ≤ 1 D. 0
428	Identity w.r.t intersection in a power set of any set is	A. $\emptyset$ B. Set itself C. Singleton set D. $\{0\}$
429	Question Image	
430	1, 1/3, 1/5, 1/7, 1/9..... is a	A. geometric sequence B. finite sequence C. infinite sequence D. arithmetic series
431	If $u = xi + yj$, then $ u $	A. $x^2 + y^2$ B. $(x^2 + y^2)^2$ C. $x^2 - y^2$ D. $\sqrt{x^2 + y^2}$
432	The minimum value of the quadratic function $f(x) = 5x^2 - 11x$, is	A. -11 B. 6 C. -7 D. 7
433	Which element is the additive inverse of (a,b) in Complex numbers	A. (a,0) B. (0,b) C. (a,b) D. (-a,-b)
434	Question Image	A. 0 B. -1 C. 1 D. -2
435	A function whose domain is a subset of natural numbers is called _____	A. Identity function B. Sequence C. Onto function D. Series
436	Question Image	
437	If A and B are two matrices of the same order , then $A+B=B+A$, what is this property called:	A. associative B. additive C. commutative D. additive identity

438	If $\underline{u} = 2\hat{i} + p\hat{j} + 5\hat{k}$ and $\underline{v} = 3\hat{i} + \hat{j} + p\hat{k}$ are perpendicular, then $p =$	A. 1 B. 2 C. -1 D. -3
439	A tower subtends an angle α at a point on the same level as the root of the tower and at a second point, b meters above the first, the angle of depression of the foot of the tower is β . The height of the tower is	A. $b \cot \alpha \tan \beta$ B. $b \tan \alpha \tan \beta$ C. $b \tan \alpha \cot \beta$ D. None of these
440	The period $\sin^2 \theta$ is	A. π B. $\pi/2$ C. 2π D. $\pi/4$
441	Question Image	
442	Question Image	A. 2 B. -1 C. 8 D. not defined
443	The coordinates of a point which trisects segment joining (0,0) and (9,12) are:	A. (4,3) B. (4,3)(8,8) C. (3,4)(6,8) D. (3,4)(8,6)
444	Geometrically, the modulus of a complex number represents its distance from the	A. Point (1, 0) B. Point (0, 1) C. Point (1, 1) D. Point (0, 0)
445	$(ABC)' =$	A. CBA' B. CBA C. C'B'A D. C'B'A'
446	The maximum value of $12 \sin \theta - 9 \sin^2 \theta$ is	A. 3 B. 4 C. 5 D. None of these
447	The distance of the points (3, 4, 5) from y-axis is	
448	If $f(x) = a_0 + a_1x + a_2x^2 + a_3x^3 + \dots + a_{n-1}x^{n-1} + a_nx^n$ then $f(n)(x)$ is equal to	A. $n!$ B. $a_n n!$ C. 0 D. a_n
449	The equations of the line thro' the point (2, 3, -5) and equally inclined to the axis are	
450	A joint equation of the lines through the origin and perpendicular to the lines $ax^2 + 2hxy + by^2 = 0$ is identical to $ax^2 + 2hxy + by^2 = 0$ if	A. $h^2 = ab$ B. $a + b = 0$ C. $a = b$ D. $a \neq b$ E. $a = b = 0$
451	Question Image	
452	If $Z_1 = 1 + i$, $Z_2 = 2 + 3i$, then $ Z_1 - Z_2 = ?$	A. $\sqrt{5}$ B. $\sqrt{7}$ C. $-1 - 2i$ D. $\sqrt{3}$
453	If the roots of $ax^2 - bx - c = 0$ change by the same quantity, then the expression in a, b, c that does not change is	
454	Question Image	
455	If the vector $2\hat{i} + 4\hat{j} - 7\hat{k}$ and $2\hat{i} + 6\hat{j} + x\hat{k}$ are perpendicular then $x = ?$	A. 0 B. 2 C. 4 D. 7
456	Optimal solution is found by evaluation the objective function at	A. All point of feasible region B. Corner point C. Origin D. None

457	Question Image	
458	In R the number of identity element w.r.t '+' is	A. One B. Two C. Three D. Four
459	The coefficient of x^n in the expansion of $(1-x)^{-1}$ is	A. $(-1)^{n2n}$ B. 1 C. $(-1)^n(n+1)$ D. $(n+1)$
460	Question Image	
461	If $z_1 = 1 + 2i$, $z_2 = 3 + 4i$ then	A. $z_1 > z_2$ B. $z_1 = z_2$ C. $z_1 < z_2$ D. None of these
462	The distance between the points (2,3) and (3,2) is	A. 5 C. 2 D. 10
463	$d/dx (\cos x^2) =$	A. $-2x \cos x$ B. $-2x \sin x^{2/sup>2</sup>}$ C. $-2x \tan x$ D. $-2x \sec^{2/sup>2</sup>} x$
464	The sum of first n even number is	A. n^2 B. $n(n+1)$ C. $n+1$ D. $n+2$
465	The value of the expression $\sin \theta + \cos \theta$ lies between	
466	Question Image	A. An empty set B. Universal set C. A singleton set D. None of these
467	Question Image	A. k^3 B. 0 C. $3k$ D. k^6
468	If a variable y depends on a variable x in such a way that each value of x determines exactly one value of y, then we say that	A. x is function of y B. y is a function of x C. y is independent variable D. x is real valued function
469	$\tan^{-1} x =$ _____	
470	The tangent to the parabola $y^2 = 4ax$ and perpendicular line from the focus on it meet	A. $x = 0$ B. $y = 0$ C. $x = -9$ D. $y = -a$
471	Question Image	A. 2, 3 B. 3, 3 C. 2, 6 D. 2, 4
472	Z is a	A. Infinite set B. Finite set C. Singleton set D. Set of all integers
473	The fifth term of an A.P. Whose first term is 5 and common difference is 3, is	A. 20 B. 17 C. 25 D. 30
474	Question Image	A. $x = f(y)$ B. $y = f(x)$ C. $x = f(x)$ D. $y = f(y)$
475	For each natural number n, $n(n+1)$ is	A. an even B. an odd C. multiple of 3 D. Irrational
476	For any two sets A and B, $A \subseteq B$ if	A. $x \in A \Rightarrow x \in B$ B. $x \notin A \Rightarrow x \notin B$ C. $x \in A \Rightarrow x \notin B$ D. None of these

477		C. $x^2 + 2x + c$ D. $(x^2 + 2x - 1)^4 + c$
478	A function from X to Y is written as	B. $f : X \text{ to } Y$ D. $f : Y \text{ to } Y$
479	Water seeps out of a conical filter at a constant rate of 5 cm/sec. the height of the cone of water in the filter is 15 cm. the height of the filter is 20 cm and radius of the base is 10 cm. the rate at which the height of the water decreases is	
480	If three non-collinear points through which a circle passes are known, then we can find the	A. variables x and y B. value of x and c C. three constant f, g and c D. inverse of the circle
481	The set of natural is a semi group w.r.t	A. Addition B. Division C. Subtraction D. None of these
482	If A is a row vector, then its transpose is a	A. Row vector B. Diagonal matrix C. Identity matrix D. None of these
483		
484	A function from X to X is denoted as	B. $f : X \text{ to } Y$ D. $f : Y \text{ to } Y$
485	What is the axis of the parabola $y^2 = 4ax$?	A. $x = 0$ B. $y = 0$ C. $x = a$ D. $y = 0$
486		A. Principle of equality of fractions B. Rule for product of fraction C. Rule for quotient of fraction D. Golden rule of fractions
487		D. none of these
488		A. 1760 B. -193 C. 223 D. none of these
489		
490	The behavior of trigonometric function is called	A. Continuity B. Discontinuity C. Periodicity D. Smoothness
491	If the line $2x - y + k = 0$ is a diameter of the circle $x^2 + y^2 + 6x - 6y + 5 = 0$ then k is equal to	A. 12 B. 9 C. 6 D. 3
492	In following question, a number series is given with one term missing. choose the correct alternative that will same pattern and fill in the blank spaces. 1, 4, 9, 16, 25, x	A. 35 B. 36 C. 48 D. 49
493	The value of 63° in term of π is	A. $5\pi/2$ B. $5\pi/3$ C. $7\pi/20$ D. $7\pi/3$
494	The line l is horizontal if	A. m is undefined B. $m=0$ C. $m=1$ D. $m=0-1$
495	8 . 7 . 6. 5 in factorial form is	
496	$ax^2 + 2hxy + by^2 + 2gx + 2fy + c = 0$ may represent an ellipse if	A. $h^2 - ab < 0$ B. $h^2 - ab \neq 0$ C. $h^2 - ab = 0$ D. $h^2 - ab > 0$
		A. one variable

497	$2x + 3y > 4$ is a linear inequality in	B. two variables C. three variables D. none of these
498	The solution set of the equation $4 \cos^2 x - 3 = 0$ is	D. none of these
499	$\tan(\cot^{-1} x)$ is equal to	A. $\cot(\tan^{-1} x)$ B. $\tan x$ C. $\sec x$ D. None of these
500	Which is not a half plane	A. $ax + by \leq c$ B. $ax + by \geq c$ C. Both A and B D. None
501	The area of the circle centred at $(1, 2)$ and passing through $(4, 6)$ is:	A. 10π B. 25π C. 5π D. $25/2\pi$
502	If the line is parallel to the y-axis, then m is said to be:	A. zero B. undefined C. $1/2$ D. -1
503	For two events A and B if $P(A) = P(A/B) = 1/4$ and $P(B/A) = 1/2$, then	A. A is sub-event of B B. A and B are mutually exclusive C. A and B are independent and $P(A/B) = 3/4$ D. None of these
504	The set $\{x \in \mathbb{N} \mid x-4=0\}$ in tabular form is	A. $\{-4\}$ B. $\{0\}$ C. $\{\}$ D. None of these
505	$(x+2)^2 = x^2 + 4x + 4$ is	A. A linear equation B. A cubic equation C. A quadratic equation D. None
506	In one hour, the hour hand of a clock turns through	
507	Which of the following is factor of $x^{11} + a^{11}$, where n is an odd integer	A. $x-a$ B. $x+a$ C. $2x-a$ D. $2x+a$
508	If $(0,4)$ and $(0,2)$ are vertex and focus of the parabola respectively, the equation of the parabola is:	A. $x^2 - 4y = -32$ B. $x^2 - 8y = -32$ C. $y^2 - 16x = 32$ D. $x^2 + 8y = 32$
509	The coefficient of x^{10} in the expansion $(x^3 + 3/x^2)^{10}$ is	A. 1700 B. 17023 C. 17027 D. 17010
510	Question Image	
511	When a selection of object is made without paying regard to the order of selection, it is called	A. Sequence B. Series C. Combination D. Permutation
512	Question Image	A. 120 B. 5 C. 4 D. 6
513	$f(x) = 2x^2 + 3x + 5$ is a	A. trigonometric function B. algebraic function C. exponential function D. logarithmic function
514	Question Image	
515	Every whole number is	A. A real number B. An irrational number C. A prime number D. A negative integer
516	A rule that assigns to each elements x in X a unique element y in Y is called a _____	A. domain B. range C. function D. none of these

517	The set of months in a year beginning with S.	A. {September, October, November} B. Singleton set C. Null set D. Empty set
518	Question Image	A. A positive integer B. A negative integer C. A natural number D. An irrational number
519	Question Image	
520	Question Image	
521	Which of the following is a vector	A. length B. momentum C. volume D. speed
522	Question Image	A. $-3 - 2i$ B. $3 + 2i$ C. $1 + 2i$ D. $1 - 2i$
523	Question Image	
524	If distance of (a,b) from y-axis is 2 then	A. $a = 2$ B. $b = 2$ C. $a = b$ D. $a = 4$
525	An airplane flying at height of 300 meters above the ground passes vertically above another plane at an instant when the angle of elevation of the two planes from the same point on the ground are 60° and 45° respectively. Then the height of the lower plane from the ground is (in meters).	
526	Question Image	
527	If the flag-staff 6 meters high placed on the top of a tower. Makes the shadow $2\sqrt{3}$ m on the ground, then the angle of elevation of the sun is	A. 30° B. 35° C. 45° D. 60°
528	Question Image	A. a B. $2a$ C. $3a$ D. $4a$
529	Question Image	A. $c = 0$ B. $c = -1$ C. $c = -2$ D. $c = 1$
530	Question Image	A. 30° B. 60° C. 45° D. None of these
531	$x = 0$ is in the solution of the inequality	A. $x > 0$ B. $3x + 4 < 0$ C. $x + 3 < 0$ D. $x - 2 < 0$
532	The root of the quadratic equation are	A. 3 B. 2 C. 1 D. 4
533	A conjunction is considered to be true only if both its components are	A. false B. equivalent C. equal D. true
534	Question Image	
535	Corner point of the system $x - y \leq 2, x + y \leq 4, x \geq 0, y \geq 0$	A. (1,4) B. (4,2) C. (3,1) D. (4,1)
536	Question Image	

537	$(A \cap B)^c =$	B. $(A \cup B)^c$ C. $A \cup B^c$ D. Φ
538	120° degrees are equal to how many radians?	
539	If $\sin \theta = 12/13$, and $\sin \theta > 0$, then $\tan \theta =$	A. 2/5 B. 12/13 C. 13/5 D. 12/5
540	Question Image	
541	Question Image	A. $-2x^{\sup>3\sup>}$ B. $2x^{\sup>-3\sup>}$ C. $-2x^{\sup>-3\sup>}$ D. $2x^{\sup>3\sup>}$
542	The centroid of a triangle divides each median in the ratio	A. 2 : 1 B. 3 : 1 C. 3 : 2 D. 1 : 1
543	Question Image	
544	The term involving x^4 in the expansion of $(3 - 2x)^7$ is	A. 120 B. 1512 C. 1250 D. 15120
545	The distance of the point (1.1) from the origin is	A. 0 B. 2
546	Question Image	
547	If A is a skew-symmetric matrix of order n and P, any square matrix of order n, prove that P^tAP is	A. Skew-symmetric B. Symmetric C. Null D. Diagonal
548	A circle is a limiting case of an ellipse whose eccentricity	A. Tends to a B. Tends to b C. Tends to 0 D. Tends to a + b
549	Period of cosec x is _____	
550	$\forall x \in (a,b), f(x)$ is increasing if	A. $f'(x) > 0$ B. $f'(x) < 0$ C. $f''(x) > 0$ D. $f''(x) = 0$
551	A statement which is already false is called	A. Tautology B. Contrapositive C. Absurdity D. Universal quantifiers
552	Question Image	
553	Let A and B be two non-empty sets, then any subset of the cartesian product $A \times B$ called a	A. Function B. Domain C. Range D. Binary relation
554	A square is inscribed in the circle $x^2 + y^2 - 2x + 4y + 3 = 0$. Its sides are parallel to the co-ordinate axes. Then one vertex of the square is	
555	The equation of the circle with (-1, 1) and radius 2 is	
556	Question Image	A. Addition B. Multiplication C. Division D. Both addition and multiplication
557	If we have a statement "if p then q" then q is called	A. Conclusion B. Implication C. Unknown D. Hypothesis
558	Question Image	A. 5 B. 10 C. 20 D. 30
559	Question Image	A. $R/[0,4]$ B. $R/(0,4)$

559	Question Image	C. (0,4) D. [0,4]
560	The identity element with respect to subtraction is	A. 0 B. 1 C. -1 D. Does not exist
561	If α, β are the roots of $ax^2 + bx + c = 0$ and $\alpha + h, \beta + h$ are the roots of $px^2 + qx + r = 0$, then $h =$	
562	The fixed point from which all the points of a circle are equidistant is called the	A. chord of the circle B. centre of the circle C. diameter of the circle D. radius of the circle
563	$\emptyset$ is a symbol of	A. singleton set B. Empty set C. Equivalent set D. Infinite set
564	For two vector a and b, $a+b =$ _____	A. a b B. b+a C. b-a D. None
565	The set of all points in the plane that are equally distant from a fixed point is called a	A. parabola B. ellipse C. hyperbola D. circle
566	Question Image	A. $\frac{\pi}{4}$ B. π C. $\frac{\pi}{3}$ D. 2π
567	Question Image	A. 20 B. 10 C. 0 D. None of these
568	The obtuse angle between lines $y = -2x + 2$ and $y = x + 2$ is	A. 120° B. 135° C. 150° D. 140°
569	The number of arbitrary constants in the general solution of a differential equation is equal to the different equation	A. Order B. Degree C. Variables D. All are correct
570	Question Image	
571	$\cos 2\alpha =$	A. $\sin^2 \alpha + \cos^2 \alpha$ B. $-\cos^2 \alpha$ C. $\tan^2 \alpha$ D. None of these
572	$\frac{1}{2}, \frac{1}{3}, \frac{1}{4}, \frac{1}{5}, \dots$ is	A. a geometric sec B. an arithmetic series C. finite sequence D. an infinite sequence
573	Conic sections or simply conics are the curves obtained by cutting a right circular cone by	A. a line B. two lines C. a plane D. two planes
574	1 radian = _____	A. 60° B. 57.296° C. 57.2°

D. 180°

575	Question Image	
576	If $f(x) = x^2 - x$ then $f(2)$ is	A. 4 B. 6 C. 2 D. 0
577	Question Image	A. 1, 1/2, 0 B. 1, 2, 1 C. 1, 2, 3 D. 1, 2, 0
578	If $T = \{2, 4, 6, 8, 10, 12\}$, then	A. $T =$ (First six natural numbers) B. $T =$ (First six odd numbers) C. $T =$ (First six real numbers) D. $T =$ (First six even numbers)
579	Question Image	A. Parallel to the plane B. At right angles to the plane C. Lies in the plane D. Meet the plane obliquely
580	The domain and range of a trigonometric function can be allocate by their	A. graph B. Continuity C. Discontinuity D. Periods
581	If $\tan^{-1}3 + \tan^{-1}x = \tan^{-1}8$, then $x =$	A. 5 B. 1/5 C. 5/14 D. 14/5
582	Any two propositions which is combined by the word "and" and form a compound proposition is called	A. conditional of the original proposition B. consequent of the original proposition C. disjunction of the original proposition D. conjunction of the original propositoin
583	Question Image	
584	The fifth term of the sequence $a_n = 2n + 3$ is _____	A. 13 B. -13 C. 8 D. 3
585	The numbers used in rows or columns are said to be entries or	A. Columns B. Rows C. Element D. Determinants E. Matrix
586	A machine operates if all of its three components function. The probability that the first component fails during the year is 0.14, the second component fails is 0.10 and the third component fails is 0.05. the probability that the machine will fail during the year is	A. 0.2647 B. 0.2692 C. 0.3647 D. None of these
587	The A.M. of two numbers is 34 and G.M. is 16, the numbers are	A. 2 and 64 B. 64 and 3 C. 64 and 4 D. None of these
588	arb mean	A. a is related to b B. b is related to a C. a is reciprocal of b D. a is not related to b
589	A bag contains 3 white, 4 black and 2 red balls. If 2 balls are drawn at random, then the probability that both the ball are white is	A. 1/18 B. 1/12 C. 1/36 D. None of these
590	If P is a whole number greater than 1, which has only P and 1 are factors. Then P is called	A. Wholw number B. Prime number C. Even number D. Odd number
591	If $b^2 - 4ac$ is positive then the roots of the equation are	A. Real B. Imaginary C. Positive D. Negative
592	If in the expansion of $(1+x)^n$, co-efficients of 2nd, 3rd and 4th terms are in A.P., then $x =$	A. 4 B. 5 C. 6 D. 7

593	A stationary point x is a relative extrema of $y=f(x)$ is	A. $f''(x) > 0$ B. $f''(x) < 0$ C. $f''(x) \neq 0$ D. $f''(x) = 0$
594		A. A B. -A C. $A^{\sup}t^{\sup}$ D. $A^{\sup}-^{\sup}$
595	The order of the matrix A is 3×2 and that of B is 2×3 . The order of the matrix BA is	A. 3×3 B. 3×2 C. 2×5 D. 5×2
596	In one hour, the hour hand of a clock turns through	
597	Three points whose position vector a,b,c are collinear	A. $axb + bxc + cxa = 0$ B. $a,b + b,c + c,a = 0$ C. $a, a xc = 0$ D. $a+b+c = 0$
598	Every term of a G.P. is positive and also every term is the sum of two preceding terms. Then the common ratio of the G.P. is	
599		A. 0 B. 1 C. -1 D. none of these
600		
601	For graphing a linear inequality, solid line is drawn if the inequality involves the symbols:	A. $>$ or $<$; B. $\geq$ or $\leq$ C. $=$ or $\neq$ D. $=$ or $>$;
602		
603		A. 0 B. $-1-w^{\sup}2^{\sup}$
604		A. I quadrant B. II quadrant C. III quadrant D. IV quadrant
605	The length of perpendicular from (3,1) to the line $4x + 3y + 20 = 0$ is:	A. 7 B. 5 C. 11 D. 12
606	$a + x$ is _____	A. A trinomial B. A binomial C. A monomial D. None of these
607	The logic in which every statement is regarded as true or false and no other possibility is called	A. Aristotelian logic B. Inductive logic C. Non-Aristotelian logic D. None of these
608	The distance of a moving particle at any instant t is $x = 3t^2 + 1$ then velocity of particle at $t = 10$ is	A. 50 cm/sec B. 60 cm/sec C. 61 cm/sec D. None of these
609	Differentiating the equation $(x-1)(x-2)^3$ with respect to x gives.	A. $2x(x+2)$ B. $2(x-1)$ C. $2(x-1)(x+2)$ D. $3x(x+2)$
610	The domain of $y = \sqrt{x^2 - 9}$ is	A. R B. $(0, +\infty)$ C. $(-\infty, -3) \cup (3, +\infty)$ D. $(0, \infty)$
611		A. $[0, 1[$ B. $[0, 1]$ C. $]0, 1[$ D. None of these
612	The graph of $y \geq 0$ is the upper - half of:	A. y-axis B. x-axis

612	The graph of $y = e^x$ is the upper half of	C. 1st and 4th quadrant D. 2nd and 3rd quadrant
613	Equation of the chord of contact to the tangents drawn from $(-3,4)$ to the circle $x^2 + y^2 = 21$	A. $-3x + 4y = 21$ B. $4x - 3y = 0$ C. $-3x + 4y = 25$ D. None of these
614		A. 2^{n-1} B. $1 - 2^n$ C. $n + 2^n - 1$ D. $2^n - 1$
615	The circular measure of the angle between the hands of a watch of 4 o'clock is	A. $\pi/2$ B. $\pi/4$ C. $2\pi/3$ D. $\pi/6$
616	Power set of X i.e $P(X)$ _____ under the binary operation of union $\cup$	A. Forms a group B. Does not form a group C. Has no identity element D. Infinite set although X is infinite
617	For $n \geq -2$, $1+3+5+\dots+(2n+5)$	A. $(n+2)^2$ B. $(n-2)^2$ C. $2n+1$ D. $(n+3)^2$
618	The equation of the circle with centre (h, k) and radius r is	A. $(x+h)^2 + (y+k)^2 = r^2$ B. $(x+h)^2 + (y-k)^2 = r^2$ C. $(x-h)^2 + (y+k)^2 = r^2$ D. $(x-h)^2 + (y-k)^2 = r^2$
619	The set R isw.r.t subtraction	A. Not a group B. A group C. No conclusion drawn D. Non commutative group
620		A. 30° B. 45° C. 60° D. 90°
621	If a_1, r are first term and the common ratio respectively then the sum of an infinite geometric series is	
622	e-radii are denoted by	A. r_1 B. r_2 C. r_3 D. All of these
623	A key ring is an example of	A. Permutation B. Circular permutation C. Combination D. None
624	A prime number can be a factor of a square only if it occurs in the square at least	A. Once B. Thrice C. Twice D. None of these
625	The number z so that the triangle with vertices $A(1,-1,0), B(-2,2,1)$ and $C(0,2,z)$ is a right triangle with right angle at vertex C	A. 1,2 B. -1,-2 C. 2,-1 D. -2,1
626	The set of ordered pairs (x,y) such that $ax+by < c$, and (x,y) such that $ax+by > 0$, are called	A. Half planes B. Boundary C. Linear Inequalities D. Feasible regions
627	If $x-2$ is a factor of $ax^2-12x+a=2a$, then $a =$ _____	A. -5 B. 5 C. 0 D. 1
628	The set of all positive even integers is	A. Not a group B. A group w.r.t. subtraction C. A group w.r.t. division D. A group w.r.t. multiplication
629	For each real number, there is a number which is its	A. Negative B. Positive C. Opposite D. Similar
		A. $\sin h x$ B. $\cosh x$

630	Question Image	B. $\cos nx$ C. $\sec nx$ D. $\operatorname{cosec} nx$
631	Question Image	A. 2 B. 4 C. 6 D. 8
632	The point of concurrency of the medians of a triangle is called	A. incentre B. circumcentre C. e-centre D. centroid
633	Question Image	A. 0 B. 1 C. 2 D. 3
634	$\tan 3x \tan 2x - \tan x$ is equal to	A. $\tan x \tan 2x \tan 3x$ B. $-\tan x \tan 2x \tan 3x$ C. $\tan x \tan 2x - \tan x \tan 3x - \tan 2x \tan 3x$ D. None of these
635	Question Image	
636	If distance between $(a, 2)$ and $(0, 0)$ is 2 then $a =$ _____	A. 0 B. 2 C. 4
637	Unit vector in the positive direction of x-axis is	
638	Let A and B be two non-empty sets, then any subset of the cartesian product $A \times B$ is called a	A. function B. domain C. range D. binary relation
639	Question Image	
640	Given matrices $A = [a_{ij}]$ and $B = [b_{ij}]$, and b and c are real number, then $(b+c)A =$	A. $bB+cB$ B. $bA+cB$ C. $bB+cA$ D. $bd+cd$
641	The area bounded by $y = x(x^2 - 4)$ and below x - axis is	A. 4 B. 0 C. -4 D. 8
642	For all points (x, y) on x-axis	A. x is positive B. x is negative C. $y = 0$ D. y is negative
643	An ellipse slides between two lines at right angles to one another. The locus of its centre is :	A. a parabola B. an ellipse C. a circle D. a hyperbola
644	Question Image	A. 1 B. -1 C. 0 D. None of these
645	Question Image	
646	Question Image	A. A rational number B. A natural number C. An irrational number D. An integer
647	The number of divisors of 1029, 1547 and 122 are in	A. A.P. B. G.P. C. H.P. D. None of these
648	The conjunction of $3 > 5$, and $5 < 9$, is	A. false B. true C. unknown D. disjunction
649	Every real number is	A. a positive integer B. a rational number C. a negative integer D. a complex number
650	If $f(x) = \tan x$ then $f(0)$ is	A. 0 B. 1 C. $\frac{1}{2}$ D. $\frac{1}{\sqrt{2}}$

651	If $\cos\theta = 9/41$ and $\sin\theta < 0$, the $\tan\theta =$	A. 41/9 B. -40/9 C. 9/10 D. 3/20
652	The number of non zero rows in echelon form of a matrix is called	A. Order of matrix B. Rank of matrix C. Row operation D. None of these
653	If $uv = \text{Proj}_v$ then	A. Uandvare parallel B. vis a unit vector C. Uis a unit vector D. Both b and c
654	Question Image	
655	Which of the following statement is true?	A. A set is a collection of non-empty object B. A set is a collection of only numbers C. a set is any collection of things D. a set is well-defined collection of objects
656	Two cards are drawn at random without replacement. the probability that the first is a king and second is not a king is	A. 48 / 663 B. 24 / 663 C. 12 / 663 D. None of these
657	Question Image	C. 16 D. None of these
658	Shifting origin to (1,-2), the new coordinates of (4,5) are:	A. (3,7) B. (5,3) C. (-3,7) D. (3,-7)
659	A point (x,y) which satisfy a linear inequality in two variables form its	A. Solution B. Domain C. Range D. None
660	Question Image	A. A B. B C. A'B' D. B'A
661	If (0, 0) and (-1, 0) are end points of a diameter, then the equation of the circle is	
662	Question Image	A. 405 / 256 B. 504 / 259 C. 450 / 263 D. None
663	Question Image	
664	Question Image	A. 4 B. 6 C. 8 D. 10
665	$\int f(x)$ is known as:	A. Definite itegral B. Indefinite integral C. Fixed integral D. Multiple integral
666	By expressing $\cos 113^\circ$ in terms of trigonometrical ratios, answer will be	A. $-\cos 76^\circ = -0.7093$ B. $-\cos 65^\circ = -0.4258$ C. $-\cos 67^\circ = -0.3907$ D. $-\cos 62^\circ = -0.8520$
667	E-radius corresponding to $\angle C$ is	
668	If $ a \times b ^2 + (a \cdot b)^2 =$ _____	A. $ a ^2 + b ^2$ B. $ a ^2 - b ^2$ C. $ a ^2 b ^2$ D. None
669	Question Image	
670	Question Image	
671	$\cos(\cos 4\pi/3) =$	A. $\pi/2$ B. $\pi/3$ C. $2\pi/3$ D. $-\pi/3$

672	The graph of a constant line is	A. vertical line B. parabola C. circle D. horizontal line
673	Question Image	
674	Question Image	
675	Question Image	
676	In school there are 150 students Out of these 80 students enrolled for mathematics class 50 enrolled for English class and 60 enrolled for Physics class The student enrolled for English cannot attend any other class but the students of mathematics and Physics can take two courses at a time Find the number of students who have taken both physics and mathematics.	A. 40 B. 30 C. 50 D. 20
677	$w^{-12} = \underline{\hspace{2cm}}$	A. 0 B. 1 C. w D. $w^{²}$
678	Question Image	A. 0 B. 1 C. -1 D. None
679	Through how many radians does the hour hand of a clock turn in one hour	
680	Question Image	A. 25 B. 16 C. 5 D. 0
681	Question Image	
682	Question Image	
683	A sequence having no last term is called	A. arithmetic sequence B. Geometric sequence C. Finite sequence D. Infinite sequence
684	$\cos 6\theta + \cos 2\theta = \underline{\hspace{2cm}};$	A. $-2\sin 4\theta \sin 2\theta$ B. $2\cos 4\theta \cos 2\theta$ C. $2\sin 4\theta \cos 2\theta$ D. $2\cos 4\theta \sin 2\theta$
685	The range of the principal sine function is	
686	The product of the four fourth roots of unity is	A. 0 B. 1 C. -1 D. None of these
687	Additive inverse of $-a - b$ is	A. a B. $-a + b$ C. $a - b$ D. $a + b$
688	If $(1+x-2x^3)^6 = 1+a_1x + a_2x^2 + a_3x^3 + \dots$ the the value of $a_2 + a_4 + a_6 + \dots + a_{12}$ will be	A. 32 B. 31 C. 64 D. 1024
689	Question Image	A. $2x \cos x^2$ B. $-2x \cos x \sin x$ C. $2x \sin x^2$ D. $-\sin x^2$
690	$A \cup (A \cap B) = \underline{\hspace{2cm}}$	A. B B. A C. $A \cup B$ D. None of these
691	Question Image	A. Two real roots B. Two positive roots C. Two negative roots D. One positive and one negative root
692	The set of second elements of the ordered pairs forming a relation called a	A. Domain B. Range C. Function D. Relation

D. Relation

693	$\sin (2\pi - \theta)$	A. $\cos \theta$ B. $\sin \theta$ C. $\tan \theta$ D. $-\sin \theta$
694	10 is a even number or 0 is a natural number, then truth value of this disjunction is	A. false B. true C. not discussed D. negation of first
695	Optimize means _____ a quantity under certain constraints	A. Minimize B. Maximize C. Maximize or minimize D. None of these
696	Which is a proper rational fraction	
697	Question Image	
698	Any horizontal line divided the plane into	A. Left half plane B. Upper and lower half planes C. Infinite number of horizontal liens D. None of these
699	General solution of $\tan 5\theta = \cot 2\theta$ is	
700	If the centre of the circle is the origin, then equation of the circlce is	A. $x^2 + y^2 = 0$ B. $2gx + 2fy - c = 0$ C. $x^2 + y^2 = r^2$ D. $gx + fy - c/2 = 0$
701	Question Image	C. 0 D. 1
702	A statement which is either true or false is called	A. Induction B. Deduction C. Proposition D. Logic
703	Question Image	A. an A.P. B. a G.P. C. a H.P. D. None of these
704	QUQ, =	A. N B. R C. W D. Z
705	If two balls are drawn from a bag containing 3 white, 4 black and 5 red balls. Then the probability that the drawn balls are of different colours is	A. 1 / 66 B. 3 / 66 C. 19 / 66 D. 47 / 66
706	In a triangle if $\alpha > 45^\circ, \beta > 30^\circ$ then γ cannot be	A. 90° B. 100° C. 10° D. 120°
707	The set of natural numbers is a subset of	A. {1, 2, 3, 100} B. The set of whole numbers C. {2, 4, 6, 8,} D. None of these
708	If $0 = \{1, 3, 5, \dots\}$, then $n(0) =$	A. Infinite B. Even numbers C. odd integers D. 99
709	If A is a subset of B and B contains at least one element which is not an element of A, then A is said to be	A. Improper subset of B B. Super set of B C. Proper subset of B D. None of these
710	The study conics, pappus used the method of:	A. analytic geometry Euclidean B. solid geometry C. Greek mathematicians D. None of these
711	$(a + bi) - c(c + di) =$	A. $(a + b) = (c + d)$ B. $(a + c) + i(b + d)$ C. $(a - c) + (c - d)i$ D. $(a - c) + (b - d)i$
712	A fraction in which the degree of the numerator is less than the deegree of the denominator is	A. Polynomial B. Equation

	called	C. Proper fraction D. Improper fraction
713	If $l=1.5$ cm and $r=2.5$ cm, then $\theta=$	A. .3 radians B. .20 radians C. .5 radians D. .6 radians
714	$n(n-1)(2n-1)$, for all natural numbers n , is divisible by	A. 12 B. 6 C. 2 D. 18
715	Find all the angles between 0 and 360 degree such that $\sin x = -1/2$?	A. 210.330 B. 30.210 C. 30.150 D. 330.150
716	The range of the function $f : x \rightarrow y$ is defined by	A. $\{x \mid y = f(x) \forall x \in X \wedge y \in y\}$ B. $\{(x,y) \mid y = f(x) \forall x \in X\}$ C. $\{y \mid y = f(x) \forall x \in X \wedge y \in y\}$ D. Y
717	$\cos(a-\beta) =$ _____;	A. $\sin a \cos \beta + \cos a \sin \beta$ B. $\sin a \cos \beta - \cos a \sin \beta$ C. $\cos a \cos \beta + \sin a \sin \beta$ D. $\cos a \cos \beta - \sin a \sin \beta$
718	If $E = \{ \}$, then $P(E)$	A. $\emptyset$ B. $\{ \}$ C. $\{(2),(4),(6),...\}$ D. $(\emptyset)$
719	Domain of $y = \cot x =$ _____	
720		A. -35 B. -28 C. 41 D. 72
721		A. $A^{\sup>-1\sup>}$ B. $A^{\sup>t\sup>}$ C. $-A$ D. A
722	A circle which touches one side of a triangle externally and the other two sides produced is called _____	A. In-circle B. Circum circle C. Escribed circle D. None of these
723	The point of concurrency of the medians of the $\triangle ABC$ is called its	A. Orthocenter B. Centriod C. Circumcentre D. Incentre
724		A. 30° B. 45° C. 60° D. 120°
725		
726	$\cos^{-1} 12/13 =$	A. $\tan^{\sup>-1\sup>} 3/5$ B. $\cot^{\sup>-1\sup>} 13/12$ C. $\sec^{\sup>-1\sup>} 13/12$ D. $\sin^{\sup>-1\sup>} 5/13$
727	A matrix with a single row is called a	A. Column matrix B. Row matrix C. Null matrix D. Identity matrix
728	If A and B are two matrices of order 2×3 and 3×1 , respectively, then $A+B =$	A. $B+A$ B. AB C. Not Possible D. 0
729		A. $\operatorname{cosec} x + c$ B. $-\operatorname{cosec} x + c$ C. $-\sec x + c$ D. $\sec x + c$
730		A. Zero matrix B. Diagonal matrix C. Column matrix D. Scalar matrix

A. 0

731	The common ratio of a geometric sequence cannot be	B. 1 C. 2 D. 3
732	The equation $(\cos p - 1)x^2 + x(\cos p) + \sin p = 0$ in the variable x , has real roots, then p can take any value in the interval	A. $(0, 2\pi)$ B. $(-\pi, \pi)$ C. $(0, \pi)$ D. None of these
733	Question Image	A. 0 B. 3 C. 9 D. -3
734	For non-trivial solution $ A $ is	A. $A = 0$ B. $A \leq 0$ C. $ A = 0$ D. None of these
735	Question Image	
736	The area of sector with central angle of 1 radians in a circular region whose radius is 2 m is	
737	For an A.P common difference d	A. Can be zero B. May or may not be zero C. Cannot be zero D. None of these
738	The roots of $(x - a)(x - b) = abx^2$ are always	A. Real B. Depends upon a C. Depends upon b D. Depends upon a and b
739	Question Image	
740	An A.P., a G.P. and a H.P. have the same first and last terms and the same odd numbers of terms, the middle terms of the three series are in	A. A.P. B. G.P. C. H.P. D. None of these
741	The expansion of $(1 - 3x)^{-1}$ is valid if	A. $ x < 1$ B. $ x < 3$ C. $ x < 1/3$ D. None of these
742	Question Image	D. none of these
743	$\forall x, y, z \in \mathbb{R}$ and $z \neq 0$, then	A. $x > y \Rightarrow xz > yz$ B. $x < y \Rightarrow xz < yz$ C. $x \neq y \Rightarrow xz \neq yz$ D. None of these
744	If points $(5, 5)$, $(10, x)$ and $(-5, 1)$ are collinear, $x =$	A. 5 B. 3 C. 9 D. 7
745	Which of the following sets is finite	A. The set of natural numbers between 3 and 10 B. The set of rational numbers between 3 and 10 C. The set of real numbers between 0 and 1 D. The set of rational numbers between 0 and 1
746	The matrix $A = [a_{ij}]_{1 \times n}$ is a	A. Vector B. Rectangular matrix C. Column vector D. Square matrix
747	Question Image	
748	If the sum of even coefficients in the expansion of $(1+x)^n$ is 128 then	A. $n=7$ B. $n=9$ C. $n=8$ D. None
749	Question Image	
	Sine is a periodic function and its period is	A. π B. s

750	One is a periodic function and its period is _____	C. 2π D. 4π
751	The 60th part of one minute is called	A. Degree B. Second C. Radian D. None of these
752	$(2.02)^4$ is equal to	A. 16 B. 16.6496 C. 17 D. 18
753	If a and b are real numbers then a+b is also real number this law is called	A. associative law of addition B. closure law of addition C. Distributive law of addition D. Commutative law of addition
754	A Geometric Series is divergent only if	A. $ r > 1$ B. $ r \geq 1$ C. $ r = 1$ D. None of these
755	If all members of a sequence are real numbers then it is called	A. A.P B. Real Sequence C. G.P D. None of these
756	A square matrix A for which $A^t = A$ is called a	A. Column matrix B. Symmetric matrix C. Skew-symmetric matrix D. Row matrix
757	All men are mortal. We are men, therefore, we are also mortal. This is a useful example of	A. deduction B. induction C. conjunction D. disjunction
758	Question Image	A. 2 B. 4 C. 8 D. 12
759	A fixed point which lies on the axis of the cone is called its:	A. axis B. apex C. plane D. diameter
760	5 unbiased coins are tossed simultaneously. The probability of getting at least one head is	A. $1/32$ B. $31/32$ C. $1/16$ D. None of these
761	Question Image	A. $2x - 3x + c$ C. $x^2 - 3x + c$
762	Question Image	
763	$\sin 45^\circ =$ _____	
764	Question Image	
765	Question Image	A. A finite non-empty set B. Null set C. Both a and b D. None of these
766	The point _____ is in the solution of the inequality $4x - 3y < 2$	A. (0,1) B. (2,1) C. (2,2) D. (3,3)
767	If $\sin x + \sin^2 x = 1$, then the value of $\cos^{12} x + 3\cos^{10} x + 3\cos^8 x + \cos^6 x + 2\cos^4 x + \cos^2 x - 2$ is equal to	A. 0 B. 1 C. 2 D. $\sin^2 x$
768	Any conditional and its contrapositive are	A. Equilavant B. Opposite C. Equal D. Not Equal
769	Write the first four terms of the arithmetic sequence 5, 2, -1, ... is	A. 3 B. -4 C. 7

		D. 1
770		A. 15 B. 9 C. 7 D. 8
771	Fundamental law is	
772		
773	The Domain of $y = \sin x$ is _____	A. Set of real numbers B. Rational C. Irrational no. D. None of above
774	The set $\{ \{a, b\} \}$ is	A. Infinite set B. Singleton set C. Two points set D. Empty set
775	If $A = \{x/x \text{ is a positive integer and } 4 \leq x < 23\}$, then $A =$	A. $\{1, 2, 3, 4, 5, 6, 7\}$ B. $\{4, 5, 6, \dots, 22\}$ C. $\{1, 2, 3, \dots, 23\}$ D. $\{1, 2, 3, 4, 5\}$
776	Which of the following is skew symmetric matrix	
777		A. $\begin{bmatrix} 2 & 1 & 3 \\ 1 & 2 & 4 \\ 3 & 4 & 2 \end{bmatrix}$ B. $\begin{bmatrix} 2 & 1 & 3 \\ 1 & 2 & 4 \\ 3 & 4 & 2 \end{bmatrix}$ C. $\begin{bmatrix} 2 & 1 & 3 \\ 1 & 2 & 4 \\ 3 & 4 & 2 \end{bmatrix}$ D. None of these
778	$\cos 315^\circ =$ _____	
779	If there is one-one correspondence between A and B, then we write.	A. $A = B$ B. $A \subseteq B$ C. $A \supseteq B$ D. $A \sim B$
780	A point of a solution regions where two of its boundary lines intersect, is called:	A. Vertex of the solution B. Feasible point C. Point of inequality D. Null point of the solution region
781	There are 16 point in a plane, in which 6 are collinear. how many lines can be drawn by joining these points?	A. 10 B. 66 C. 71 D. 106
782	202.04 is an example of	A. Recurring decimals B. Non-recurring decimals C. Terminating decimals D. None of these
783	The law of sines can be used to solve oblique triangle when following information is given:	A. Two angles and a side B. Two sides and an angle opposite one of the given sides C. Two sides and the angle between two sided D. Option a and b
784		
785	$[i, j, k]$	A. 0 B. 2 C. 1 D. -2
786	In a class of 100 students, 60 drink tea, 50 drink coffee and 30 drink both. A student from his class is selected at takes at last one of 2 drinks is	A. $2/5$ B. $3/5$ C. $4/5$ D. None of these
787	The 8th term of $(1+2x)^{-1/2}$ is	A. $-221/16 x^{7/8}$ B. $-225/18 x^{7/8}$ C. $-407/9 x^{3/8}$ D. $-429/16 x^{7/8}$
788		
789	The velocity and acceleration at any point t of a particle which moves along straight line $x = 5t - 3$	A. 5, 3 B. 5, -3 C. 5, 0 D. 10, 0
790		A. direction ratios B. direction cosines

		C. direction angles D. none of these
791	Question Image	
792	If n is positive integers, then $2^n > 2n+1$, only when	A. $n \leq 3$ B. $n \geq 3$ C. $n \leq 2$ D. $n \leq 1$
793	The period of $3 \sin x$ is	A. 2π B. 9π C. 3π D. 5π
794	Domain of $\cos \theta$ is	A. Set of odd numbers B. Set of integers C. Set of real numbers D. Set of complex numbers
795	the latus rectum of the parabola $x^3 = -4ay$ is:	A. $x = a$ B. $y = -a$ C. $x = -a$ D. $y = 0$
796	The order of the matrix $\begin{bmatrix} 1 & 2 & 3 \end{bmatrix}$ is	A. 1×1 B. 3×3 C. 3×1 D. 1×3
797	If $y=f(x)$ is a function then x is called	A. dependent variable B. independent variable C. constant D. none of these
798	Find the next two terms of 7, 9, 12, 16,...	A. 18, 20 B. 19, 22 C. 20, 25 D. 21, 27
799	Two circle $x^2 + y^2 + 2x - 8 = 0$ and $x^2 + y^2 - 6 + 6x - 46 = 0$:	A. touch internally B. do not intersect C. touch externally D. None of these
800	The minimum value of the function $f(x) = x^2 - x - 2$ is.	A. $-9/2$ B. -1 C. $-9/4$ D. 0
801	the function $y = mx+c$ is, called linear function, because	A. it has only two variables B. it has one variable C. its graphs is straight line D. its graphs is circle
802	If the cutting plane is parallel to the axis of the cone and intersects both of its nappes, then the curve of intersection is	A. an ellipse B. a circle C. a parabola D. a hyperbola
803	Consider the equation $px^2 + qx + r = 0$ where p, q, r are real The roots are equal in magnitude but opposite in sign when	A. $q = 0, r = 0, p \neq 0$ B. $p = 0, qr \neq 0$ C. $r = 0, pq \neq 0$ D. $q = 0, pq \neq 0$
804	$w^{29} = \underline{\hspace{2cm}}$	A. 0 B. 1 C. w D. w^{29}
805	$(51)^4$ is equal to	A. 7065201 B. 8065201 C. 6765201 D. 6565201
806	$\cos^{-1}(-x) =$	A. $-x$ B. $1/x$ C. $\tan^{-1} x$ D. $\pi - \cos^{-1} x$
807	The multiplicative inverse of (a,b) is	
808	The value of 150° in term of π is	A. $2\pi/5$ B. $5\pi/2$ C. $3\pi/2$ D. $2550/32401\pi$
	In the expansion of $(a + x)^n$ the sum of	A. $n + 1$

809	In the expansion of $(a + x)^n$ the sum of exponents of a and x in each term of the expansion is	B. $n - 1$ C. n D. $2n$
810	A bag contains 7 white, 5 black and 4 red balls. If two balls are drawn at random from the bag, the probability that they are not of the same color is	A. $73 / 120$ B. $83 / 120$ C. $67 / 120$ D. $43 / 120$
811	Question Image	
812	Question Image	A. 1 B. 12 C. 5 D. 29
813	$\int \sin(ax+b) dx$ is equal to:	A. $\frac{1}{2a} \cos(ax + b)$ B. $-\frac{1}{a} \cos(ax + b)$ C. $\frac{1}{a} \cos(ax + b)$ D. $\frac{1}{a} \ln(ax + b)$
814	$\forall a, b, c \in \mathbb{R}, a + c = b + c \Rightarrow a = b$	A. Reflexive property B. Symmetric property C. Cancellations property w.r.t. addition D. Transitive property
815	Question Image	
816	If the roots of $x^2 + ax + b = 0$ are non-real, then for all real x, $x^2 + ax + b$ is	A. Negative B. Positive C. Zero D. Nothing can be said
817	If $\sin 6\theta + \sin 4\theta + \sin 2\theta = 0$, then $\theta =$	
818	Question Image	
819	Question Image	
820	Onto function is also called	A. Bijective function B. Injective function C. Surjective function D. None of these
821	Question Image	
822	Question Image	
823	Question Image	
824	If $kx^2 + 2hxy - 4y^2 = 0$ represents two perpendicular lines then	A. $k = 2$ B. $k = \pm 2$ C. $k = -2$ D. $k \neq 0$
825	Question Image	
826	If the cutting plane is parallel to the axis of the cone and intersects both of its nappes, then the curve of intersection is	A. an ellipse B. a circle C. a parabola D. a hyperbola
827	Question Image	A. Principle of equality of Fractions B. Rule for product of fraction C. Golden rule of fraction D. Rule of quotient of Fraction
828	Question Image	A. $-2x \cos x$ B. $-2x \sin x$ C. $-x \sin x$ D. $-2x \sin x$
829	The straight lines represented by the equation $ax^2 + 2hxy + by^2 = 0$ intersect at	A. (1,1) B. (0,1) C. (1,0) D. (0,0)
830	The number of standard parabolic functions are is	A. 4 B. 2 C. 3 D. 1
831	$\sin(3\pi/2 - \theta) =$ _____;	A. $\sin \theta$ B. $\cos \theta$ C. $-\sin \theta$ D. $-\cos \theta$

832	Question Image	
833	The range of inequality $x + 2 > 4$ is	A. $(-1, 2)$ B. $(-2, 2)$ C. $(1, \infty)$ D. None
834	Question Image	A. quadratic function B. constant function C. linear function D. exponential function
835	The modulus of $12-5i$ is:	A. 7 B. 13 C. $\sqrt{7}$ D. 119
836	Question Image	
837	The period of $ \sin 2x $ is	A. $\pi/2$ B. $-\pi/2$ C. π D. $\pi/3$
838	Question Image	
839	If $x < y$, $2x = A$, and $2y = B$, then	A. $A = B$ B. $A < B$ C. $A < x$ D. $B < y$
840	Question Image	
841	$\tan^{-1}x > \cot^{-1}x$ holds for	A. $x > 1$ B. $x < 1$ C. $x = 1$ D. All values of x
842	Question Image	A. trigonometric equation B. conditional equation C. identity D. None
843	If $f(x) = x^2 - x$ then $f(-2)$ is	A. 4 B. 6 C. 2 D. 0
844	Question Image	
845	If $A=B$, then	A. $A \subset B$ and $B \subset A$ B. $A \subseteq B$ and $B \not\subseteq A$ C. $A \subseteq B$ and $B \subseteq A$ D. None of these
846	Question Image	A. 0 B. -4 D. none of these
847	Question Image	A. hypothesis B. implication C. consequent D. conditional
848	Question Image	
849	The conditional statement "If p then q " is logically equivalent to the statement.	A. Not p or Not q B. Not p and Not q C. Not p or q D. p or q
850	Which of the following is surjective	
851	Find the set of value of m for which expression $2x^2 - mx + 2 = 0$ have real roots?	A. $m < -4$ B. $m > 4$ C. $-4 \leq m \leq 4$ D. None
852	The key for opening a door is in a bunch of 10 keys. A man attempts to open the door by trying the keys at random discarding the wrong key. The probability that the door is opened in the 5th trial is	A. $1/10$ B. $2/10$ C. $3/10$ D. $4/10$

853	For three consecutive terms in A.P middle term is called	B. nth term C. Central term D. None of these
854	A point where two of its boundary lines intersect is called	A. Corner point B. Feasible point C. Vertex D. Feasible solution
855		A. $Y = -x \log x - x + c$ B. $Y = x \log x + x$ C. $Y = x \log x - x + c$ D. None of these
856	The liner equation $ax + by = c$ is called _____ of the inequality $ax + by > c$.	A. Associated equation B. Non-associated equation C. disjoint equation D. Feasible equation
857	$154^{\circ} 20' =$	A. $2550/34401\pi$ B. $27721/22400\pi$ C. $2521/32400\pi$ D. $4125/32400\pi$
858		A. 0 B. 1
859	Coordinates of the focus of the parabola $x^2 - 4x - 8y - 4 = 0$ are:	A. (0,2) B. (,0,1) C. (2,0) D. (1,2)
860	If you are looking someone on the ground from the top of a hill the angle formed is called angle of _____;	A. Elevation B. Depression C. Right angle D. None off these
861	Function is a special type of	A. relation B. ordered pairs C. Cartesian product D. Set
862	Three numbers are chosen random without replacement from {1, 2, 3, ..., 10}. the probability that minimum of the chosen numbering is 3 or their maximum is 7	A. 7 / 40 B. 5 / 40 C. 11 / 40 D. None of these
863	The angle between the vectors $3i + j - k$ and $2i - j + k$ is	
864	Roots of the equation $x^2 - 7x + 10 = 0$ are	A. {2, 5} B. {-2, 5} C. {2,5} D. {-2,-5}
865	Which of the following is the definition of singleton	A. The objects in a set B. A set having no element C. A set having no subset D. None of these
866	$(a,b) = (c,d)$ if and only if	A. $a=b$ and $c=d$ B. $a = d$ and $b = c$ C. $a = c$ and $b = d$ D. $a - b = c - d$
867	Z is a group under	A. Subtraction B. Multiplication C. Addition D. None of these
868	What is the conjugate of $-7 - 2i$?	A. $-7 + 2i$ B. $7 + 2i$ C. $7 - 2i$ D. None of these
869	The square matrix A is skew-symmetric when $A^t =$	A. $-B$ B. $-C$ C. $-A$ D. $-D$
870		A. $1/x$ B. $-x$ C. $2x$ D. $0.5x$

871	Out of 10,000 families with 4 children each, the number of families all of whose children are daughters is	B. 500 C. 625 D. 150
872	Question Image	D. none of these
873	The set $(\mathbb{Z}, +)$ forms a group	A. Forms a group w.r.t. addition B. Non commutative group w.r.t. multiplication C. Forms a group w.r.t multiplication D. Doesn't form a group
874	Question Image	
875	The distance of the point $(-2, 3)$ from y-axis is	A. 2 B. -2 C. 3 D. 1
876	The number of combinations of 10 different objects taken 8 objects at a time is	A. 90 B. 45 C. 55 D. 50
877	The centre of the circle $x^2+y^2-2fx-2gy+x=0$ is	A. $(-g,-f)$ B. (g,f) C. (f,g) D. $(-f,-g)$
878	Question Image	B. A C. A' D. U
879	A function $f(x)$ is said to be the periodic function if for all x in the domain of f , there exists a smallest positive number p such the $f(x + p) =$ _____	A. $f(p)$ B. $f(x)$ C. $f(o)$ D. None of these
880	The middle term of $(x-y)^8$ is	A. $25 x^4 y^4$ B. $70 x^4 y^4$ C. $120 x^4 y^4$ D. $97 x^4 y^4$
881	Question Image	A. $\frac{3}{4}$ B. r C. v D. None of these
882	The probability to get an odd number in a dice thrown once is	A. $\frac{1}{2}$ B. $\frac{1}{6}$ C. $\frac{1}{3}$ D. 2
883	The point which divides the line segment joining the points (a, b) and (c, d) in the ratio 2 : 3 internally is	D. none of these
884	Question Image	A. x^{39} B. $40x^{39}$ C. $40x^{41}$ D. none of these
885	The sum of all odd numbers between 100 and 200 is	A. 6200 B. 7500 C. 6500 D. 3750
886	Question Image	
887	If the intersecting plane is parallel to a generator of the cone, but intersects its one nappe only, the curve of intersection is	A. a circle B. an ellipse C. a parabola D. a hyperbola
888	$56^\circ =$radians	A. 1.25 B. 2.56 C. 95 D. 0.98
889	The exact value of $\cos^{-1}(0)$ is	A. $\frac{\pi}{2}$ B. $-\frac{\pi}{2}$ C. 3π D. $\pi - \frac{\pi}{6}$
890	The equation of the directrix of the parabola $x^2 = 4ay$ is	A. $x + a = 0$ B. $x - a = 0$ C. $y + a = 0$ D. $y - a = 0$

891	We solve the system of non-homogeneous linear equations by	A. a and b B. b and c C. c and a D. a,b and c
892	Question Image	
893	Question Image	
894	The equation: $x^2 + y^2 + 2gx + 2fy + c = 0$, represents	A. pair of lines B. a circle C. a general second degree equation D. a hyperbola
895	Question Image	A. $A = B$ B. $B = C$ C. $A = C$ D. None of these
896	The number of words that can be formed out of the letters of the word ASSASSINATION is	
897	In a school there are 150 students Out of these 80 students enrolled for mathematics class.50 enrolled for English class and 60 enrolled for Physics class The student enrolled for English cannot attend any other class but the students of mathematics and Physics can take two courses at a time find the number of students who have taken both physics and mathematics.	A. 40 B. 30 C. 50 D. 60
898	The formula $a_n = ar^{n-1}$ represents	A. nth term of G.P B. Sum of the first n terms C. G.M between a and b D. None of these
899	Question Image	
900	If points A (6,-1), B (1,3) and C (x,8) are such that $AB=BC$, then x =	A. 3,5 B. -3,5 C. 3,-5 D. -3,-5
901	Which of the following is the subset of all sets?	
902	$G = \{e, a, b, c\}$ is an Abelian group with e as identity element The order of the other elements are	A. 2,2,2 B. 3,3,3 C. 2,2,4 D. 2,3,4
903	A particle moving in a straight line with velocity $V = (4-t^2)$ where t is the line from a fixed point. The acceleration of the particle after 4 sec is.	A. -8 m/sec^2 B. -4 m/sec C. -8 m/sec D. -4 m/sec^2
904	If $a^2 = b^2$ then	A. $a = b$ B. $a+b=1$ C. $ a+b =0$ D. None
905	$Q \cup Q' =$	A. Q B. Q' C. N D. R
906	If $A \cap B = B$, then $n(A \cap B)$ is equal to	A. $n(a)$ B. $n(a)+n(c)$ C. $n(c)$ D. None of these
907	The roots of the equation $ax^2 + bx + c = 0$ are complex/imaginary if	A. $b^2 - 4ac < 0$ B. $b^2 - 4ac = 0$ C. $b^2 - 4ac > 0$ D. None of these
908	The latus rectum of the ellipse $5x^2 + 9y^2 = 45$ is	A. $10/3$ B. $5/3$ C. $3/5$ D. $3/10$
909	The roots of the equation will be irrational if $b^2 - 4ac$ is	A. Positive and perfect square B. Positive but not a perfect square C. Negative D. Zero
910	The equation $ax^2 + 2hxy + by^2 + 2gx + 2fy + c = 0$ represents an ellipse if	

911	$\sin[\cot^{-1}\{\cos(\tan^{-1}x)\}]=$	
912	If the cutting plane is parallel to the axis of the cone and intersects both of its nappes, then the curve of intersection is:	A. an ellipse B. a circle C. a parabola D. a hyperbola
913	The direction cosines of any normal to the xy-plane are	A. $\langle 1, 0, 0 \rangle$ B. $\langle 0, 1, 0 \rangle$ C. $\langle 1, 1, 0 \rangle$ D. $\langle 0, 0, 1 \rangle$
914	The many subset can be formed from the set {a,b,c,d}	A. 8 B. 4 C. 12 D. 16
915	A function f will have an inverse function if and only if it is a	A. onto function B. into function C. Constant D. one-one function
916	Question Image	
917	The set of cartesian product A x B consists of	A. Domain B. Range C. Binary relation D. Ordered pair
918	If n is add the expansion $(a + x)^n$ has middle terms	A. 2 B. 3 C. 4 D. 5
919	If A is such that a,A,B are in A.P then A is called	A. A.M B. Common ratio C. Common difference D. None of these
920	The roots of the equation $ax^2 + bx + c = 0$ are real and distinct if	A. $b^2 - 4ac < 0$ B. $b^2 - 4ac = 0$ C. $b^2 - 4ac > 0$ D. None of these
921	Number of selections of n different things out of n	A. 1 B. nPr C. n! D. nPr
922	If the points (a,2b):(c,a+b):(2c-a,h) lie on the same line then	A. $h=2a$ B. $h=a+b$ C. $h=ab$ D. $h=ac$
923	If for the matrix A, $A^5 = I$, then $A^{-1} =$	A. A^2 B. A^3 C. A D. None of above
924	$\frac{1}{3}$ is _____	A. A prime number B. An integer C. A rational number D. An irrational number
925	Question Image	
926	Question Image	
927	Question Image	
928	Question Image	A. Diagonal matrix B. Scalar matrix C. Triangular matrix D. Identity matrix
929	Question Image	A. 0 B. 1
930	Range of $\sec^{-1}x$ is	A. $Z - \{x \mid -1 < x < 1\}$ B. $W - \{x \mid -1 < x < 1\}$ C. $R - \{x \mid -1 < x < 1\}$ D. R
931	The harmonic mean between a and b is	
---	The upper 3/4 the portion of a vertical pole subtends an angle $\tan^{-1} \frac{3}{5}$ at a point in the	A. 20 m B. 40 m

932	horizontal plane through its foot and at a distance 40 m from the foot. A possible height of the vertical pole is	C. 60 m D. 80 m
933	If G is the centroid of the triangle, then $GA + GB + GC =$	A. 0 B. 1 C. -1 D. 3
934	Question Image	
935	What is range of the function $g(x) = x-3 $?	A. $[0, \infty)$ B. $(0, \infty)$ C. $(-\infty, 3]$ D. $[0, \infty)$
936	Range of $\operatorname{cosec} \theta$ is	A. $W - \{y \mid -1 \leq y \leq 1\}$ B. $R - \{y \mid -1 \leq y \leq 1\}$ C. $O - \{y \mid -1 \leq y \leq 1\}$ D. R
937	In translation of axes, _____ is shifted to another point in the plane.	A. a-axis B. y-axis C. origin D. Point
938	The roots of $ax^2 + bx + c = 0$ are always unequal if	A. $b^2 - 4ac = 0$ B. $b^2 - 4ac \neq 0$ C. $b^2 - 4ac > 0$ D. $b^2 - 4ac \geq 0$
939	If range of a function f is B, then the function is	A. surjective B. injective C. bijective D. into
940	The vertex of the graph of the quadratic function $f(x) = -x^2 + 6x + 1$, is	A. (-3,10) B. (-3,-10) C. (3,10) D. (3,-10)
941	Basic principles of deductive logic were laid down by	A. Euclid B. Leibniz C. Newton D. Aristotle
942	$a > b \Rightarrow a + c > b + c$ is known as	A. Trichotomy property B. Additive property of inequality C. Transitive property D. Multiplicative property
943	$\sin^{-1} x =$ _____	
944	Question Image	
945	Question Image	
946	The property used in $-3 < -2 \Rightarrow 0 < 1$	A. Commutative property B. Additive property of inequality C. Additive inverse D. Additive identity
947	Question Image	A. From an empty set B. 1 C. 2 D. ≥ 2
948	A circle drawn inside a triangle and touching its sides is called _____;	A. Circumcircle B. Incircle C. Escribed circle D. unit circle
949	If a tangent line touches the function $y = f(x)$ in more than one point then $y = f(x)$ is	A. Periodic B. Surjective C. Bijective D. Injective
950	The angle of elevation of the top of a tree from a point 17 meters from its foot is 42° . The height of the tree is	A. 12m B. 21m C. 17m D. 15m
951	Question Image	A. R B. 2R C. r D. 2r
952	Question Image	

952		
953	If n is odd then the middle terms in the expansion of $(a + x)^n$ are	
954	Question Image	A. additive property B. multiplicative property C. additive inverse D. additive identity
955	The general value of θ satisfying the equation $2\sin^2\theta - 3\sin\theta - 2 = 0$ is	
956	If $\sin\alpha$ and $\cos\alpha$ are the roots of the equation $px^2 + qx + r = 0$, then	A. $p^2 + q^2 - 2pr = 0$ B. $(p + r)^2 = q^2 - r^2$ C. $p^2 + q^2 + 2pr = 0$ D. $(p - r)^2 = q^2 + r^2$
957	Question Image	
958	Question Image	
959	Question Image	A. parallel vectors B. perpendicular vectors C. concurrent vectors D. collinear vectors
960	Question Image	A. Polynomial of degree 0 B. Polynomial of degree 1 C. Polynomial of degree 2 D. Polynomial of degree n
961	Question Image	
962	Question Image	
963	Question Image	
964	If A is a non singular matrix then $A^{-1} =$ _____	
965	Question Image	A. A rational number B. An irrational number C. An odd number D. A prime number
966	Inequalities have _____ symbol	A. 2 B. 3 C. 4 D. 1
967	The negation of given number is a	A. Binary operation B. Unary operation C. Relation D. None of these
968	The position vector of any point in space is	
969	By expressing $\sin 125^\circ$ in terms of trigonometrical ratios, answer will be	A. $\sin 65^\circ = 0.9128$ B. $\sin 55^\circ = 0.8192$ C. $\sin 70^\circ = 0.5384$ D. $\sin 72^\circ = 0.1982$
970	If $a_1 = a_2 = 2$, $a_n = a_{n-1} - 1$ ($n > 2$), then a_5 is	A. 1 B. 0 C. -1 D. -2
971	Z is the set of integers, $(Z, *)$ is a group with $a * b = a + b + 1$, $a, b \in G$. then inverse of a is	A. -a B. a + 1 C. -2 - a D. None of these
972	If A and B are skew-symmetric then $(AB)^t$ is	A. At Bt B. AB C. -AB D. BA
973	Question Image	A. $-2x$ B. x^3 D. $-2x^3$
974	Question Image	A. quadrant I B. quadrant II C. quadrant III D. quadrant IV

975	Question Image	A. $\sinh x$ B. $\cosh x$ C. $\tanh x$ D. $\cot h x$
976	Question Image	
977	$(x + 3)(x + 4) = x^2 + 7x + 12$ is _____	A. Quadratic equation B. Linear equation C. Cubic equation D. Identity
978	Every natural number is	A. A prime number B. An irrational number C. An integer D. An even number
979	The feasible region which can be enclosed within a circle is called	A. Bounded region B. Convex region C. Unbounded region D. None
980	Question Image	A. 1 B. 2 C. 3 D. None of these
981	If $a = 5i + 2j$, then $ a =$	A. $\sqrt{13}$ B. $\sqrt{7}$ C. $1/\sqrt{13}$ D. $\sqrt{29}$
982	There is no integer n for which 3^n is	A. Odd B. even C. Natural D. Prime
983	Question Image	
984	The ratio in which the line $y - x + 2 = 0$ divides the line joining $(3, -1)$ and $(8, 9)$ is	A. 2:3 B. -2:3 C. 3:2 D. -3:2
985	If $0 \in R$, then the additive inverse of a is	A. $1/9$ B. $\frac{1}{-9}$ C. a D. $-a$
986	Every prime number is also	A. Rational number B. Even number C. Irrational number D. Multiple of two numbers
987	Multiplication of a row vector A by a column vector B requires as a precondition that each vector have	A. Same order B. Same number of elements C. Equal elements D. Transpose
988	Find all the angle between -360° and 180° when $\sin x = 1/2$?	A. $-30^\circ, -150^\circ$ B. $30^\circ, 150^\circ$ C. $30^\circ, -150^\circ$ D. $-30^\circ, 150^\circ$
989	$i^9 =$	A. i^2 B. -1 C. 1 D. i
990	Question Image	A. 295 B. 495 C. 395 D. 722
991	If a, b, c are sides of a triangle taken in order then $a \times b =$	A. $b \times c$ B. $b \times a$ C. $c \times a$ D. Both a & b
992	If a statement $S(n)$ is true for $n = i$ where i is some natural number and the truth of $S(n)$ for $n = k > i$ implies the truth of $S(n)$ for $n = k + 1$ then $S(n)$ is true for all positive integers	
993	If A is a skew-symmetric matrix of order n and P , any square matrix of order n . prove that $P'AP$ is	A. Skew-symmetric B. Symmetric C. Null D. Diagonal

994	Sec $30^\circ =$ _____	
995	The set $\{1, -1\}$ is closed w.r.t.	A. Addition B. Multiplications C. Subtraction D. None of these
996	Question Image	
997	The period of $2 \cos x$ is	A. 30π B. 7π C. 5π D. 2π
998	The point of contact of the circles $x^2 + y^2 - 6x - 6y + 10 = 0$ and $x^2 + y^2 = 2$ is	A. $(-3, 2)$ B. $(1, 3)$ C. $(-2, -1)$ D. None of these
999	Question Image	
1000	Question Image	
1001	Question Image	
1002	According to Aristotle, in preposition there could be	A. One possibility B. Two possibility C. three possibility D. Seven possibilites
1003	Question Image	
1004	We also the system of non-homogeneous linear equations by	A. a and b B. b and c C. c and a D. a, b and c
1005	The 7th term of $(3^8 + 6^4x)^{11/4}$ is	A. $-19217/3 x^{6\frac{1}{2}}$ B. $189/2 6^{4\frac{1}{2}}x$ C. $2227/12 x^{3\frac{1}{2}}$ D. $-19712/3 x^{6\frac{1}{2}}$
1006	Question Image	A. 0 B. 1 C. 13
1007	Question Image	A. $a^{x\frac{1}{x}}$ B. $a^{x\frac{1}{x}} \ln a$
1008	Adjoint of matrix A is denoted by	A. A^{-1} B. $\text{adj}A/ A $ C. $-A$ D. None of these
1009	Question Image	D. none of these
1010	Question Image	
1011	The slope of the tangent at the point (h, h) of the circle $x^2 + y^2 = a^2$ is	A. 0 B. 1 C. -1 D. h
1012	The transpose of a zero matrix is a _____	A. Column matrix B. Zero matrix C. Row matrix D. Scalar matrix
1013	A matrix in which the number of rows is not equal to the number of columns is called a	A. Diagonal matrix B. Rectangular matrix C. Square matrix D. Scalar matrix
1014	A non-terminating, non-recurring decimal represent	A. A natural number B. A rational number C. An irrational number D. A prime number
1015	If $f(x) = x^2$ then $f(-2)$ is	A. -2 B. 2 C. 4 D. -4
1016	The point R dividing externally the line joining the points $P(x_1, y_1)$ and $Q(x_2, y_2)$ in the ratio $k_1 : k_2$ has the coordinates	

1017	Question Image	
1018	If A and B are two sets then any subset R of A x B is called	A. relation on A B. relation on B C. relation from A to B D. relation from B to A
1019	If α, β are the roots of $ax^2+bx+c=0$, the equation whose roots are doubled is	A. $ay^2 + 2by + c = 0$ B. $ay^2 + 2by + 4c = 0$ C. $ay^2 + 2by + c = 0$ D. $ay^2 + by + 4c = 0$
1020	Question Image	A. 0 B. -1 C. 1 D. not defined
1021	The intercepts of the plane $2x - 3y + 4z = 12$ on the co-ordinate axes are given by	A. 2, -3, 4 B. 6, -4, -3 C. 6, -4, 3 D. 3, -2, 1.5
1022	Every recurring decimal represents	A. A natural number B. A rational number C. An irrational number D. A whole number
1023	For a set A, $A \cup A^c =$ -----	A. A B. $\emptyset$ C. A^c D. U
1024	For any positive integer n	A. $AB^n = B^n A \Leftrightarrow AB = BA$ B. $AB^n = B^n A \Leftrightarrow A, B$ are square matrices and $AB = BA$ C. $AB^n = B^n A \Leftrightarrow A + B$ D. $AB^n = B^n A \Leftrightarrow A$ and B are square matrices
1025	Question Image	A. injective as well as surjective B. both onto and into C. one - one and into D. only (1 - 1)
1026	Question Image	
1027	There are n seats round a table numbered 1, 2, 3 n. The number of ways in which m person can take seats is	A. ${}^nP_{{}^mC}$ B. ${}^nC_{{}^mP} \times (m - 1) !$ C. ${}^{n-1}P_{{}^mC}$ D. None of these
1028	Question Image	A. 1 B. 7 C. 4 D. None of these
1029	Question Image	A. images B. pre-images C. constants D. none of these
1030	Question Image	
1031	The point R dividing internally the line joining the points $P(x_1, y_1)$ and $Q(x_2, y_2)$ in the ratio $K_1 : K_2$ has the coordinates	
1032	Question Image	
1033	If a, b, c are in A.P., a, b, c are in G.P. then A, m^2b, c are in	A. A.P. B. G.P. C. H.P. D. None of these
1034	Question Image	A. I B. A C. A I D. None of these
1035	Question Image	D. none of these
1036	All men are mortal, We are men, there fore, we are also mortal. This is a useful example of	A. Deduction B. Induction C. Conjunction D. disjunction
1037	$f(x) = \sin x$ is:	A. an odd function B. an even function C. an implicit function

		D. an exponential function
1038	Question Image	A. A B. B C. A' D. None of these
1039	The next term of the sequence 1, 2, 4, 7, 11, is.	A. 15 B. 16 C. 17 D. 18
1040	Question Image	A. $A = x$, $B = 1$ B. $A = 0$, $B = 2$ C. $A = -1$, $B = 1$ D. $A = x-1$, $B = x + 1$
1041	Range of $2 \tan x$ is _____	A. $[-2, 2]$ B. $-1 \leq x \leq 1$ C. $\mathbb{R}$ D. None of these
1042	Question Image	A. π B. $\frac{\pi}{6}$ C. $\frac{\pi}{2}$ D. π
1043	Question Image	
1044	Domain of tangent function is	
1045	Trivial solution of homogeneous linear equation is	A. (0, 0, 0) B. (1, 2, 3) C. (1, 3, 5) D. a, b and c
1046	Differentiating the equation $e^{2x}/x+1$ with respect to X is given by	A. $\frac{2e^{2x}}{x^2} - \frac{e^{2x}}{x^3}$ B. $\frac{2e^{2x}}{x^2} + \frac{e^{2x}}{x^3}$ C. $\frac{2e^{2x}}{x^2} - \frac{e^{2x}}{x^3}$ D. $\frac{2e^{2x}}{x^2} + \frac{e^{2x}}{x^3}$
1047	Geometrically the modulus of a complex number represents its distance from the	A. Point (1,0) B. Point (0,1) C. Point (1,1) D. Point (0,0)
1048	Question Image	
1049	Question Image	A. Hermitian matrix B. Skew-hermitian matrix C. Symmetric matrix D. Identity matrix
1050	Question Image	A. C^r B. C^{r+1} C. C^{r+1} D. None
1051	The magnitude of vector $a - 2i - 7j$ is	A. $\sqrt{23}$ B. $\sqrt{43}$ C. 3 D. $\sqrt{53}$
1052	$60^\circ =$ _____	
1053	The vertex of the standard position angles lies on	A. (0,0) B. (0,1) C. (1,0) D. (1,1)
1054	Maximum value of $z = 15x + 20y$ subject to $3x + 4y \leq 12, x, y \geq 0$ is given by	A. 46 B. 60 C. 50 D. 70
1055	A die is thrown 100 times. If getting an odd number is considered a success, the variance of the number of successes is	A. 50 B. 25 C. 10 D. 100

1056	Question Image	A. I quadrant B. II quadrant C. III quadrant D. IV quadrant
1057	According to Aristotle, in proposition there could be	A. one possibilities B. two possibilities C. three possibilities D. seven possibilities
1058	$\cos 0^\circ =$ _____	A. -1 B. 0 C. 1 D. Undefined
1059	Tangent is a periodic function and its period is _____	A. 2π B. 3π C. π D. 4π
1060	$\sin(\alpha + \beta) - \sin(\alpha - \beta) =$	A. $4 \cos \alpha \sin \beta$ B. $2 \cos \alpha \sin \beta$ C. $4 \cos \alpha \cos \beta$ D. $4 \sin \alpha \sin \beta$
1061	Question Image	
1062	If $u = [3, -4]$, then modulus of u is:	A. 5 B. 5i C. -5 D. $\sqrt{5}$
1063	Question Image	
1064	The second degree equation $2x^2 - xy + 5x - 2y + 2 = 0$ represents	A. Circle B. Hyperbola C. Ellipse D. Pair of straight lines
1065	Question Image	A. $4x + 1$ B. $4x$ C. $2x^3$ D. none of these
1066	Question Image	
1067	The number of terms in the expansion of $(a + b)^9$ is	A. 10 B. 11 C. 9 D. 12
1068	$\sin^{-1}[-1/2] =$ _____	
1069	H.M. between 3 and 7 is	
1070	$\sin(a - 90^\circ) =$ _____;	A. $\sin a$ B. $\cos a$ C. $-\sin \theta$ D. $-\cos a$
1071	Period of $2 \cos x$ is _____	
1072	If $\theta = 60^\circ$ then	A. $\sin \theta = 1/2$ B. $\tan \theta = \cot 30^\circ$ C. $\sin \theta = \cot 30^\circ$ D. $\tan \theta = \cot 30^\circ$

224);"><i>π</i>/4
D. sec<i>θ</i>= 4

1073	Question Image	
1074	$s > t$ then	A. $(s - t)^2 > (t - s)^2$ B. $(s - t)^2 < (t - s)^2$ C. $(s - t)^2 = (t - s)^2$ D. None
1075	Question Image	A. $ab = -1$ B. $ab = 1$ C. $ab = 2$ D. None
1076	The corner point of the boundary lines, $x - 2x + 2y = 10$ is:	A. (8,1) B. (1,8) C. (6,10) D. (3,5)
1077	Question Image	
1078	An equation which holds good for all values of variables is called	A. Equation B. Conditional equation C. Constant D. None
1079	Question Image	D. none of these
1080	Question Image	
1081	Two matrices A and B are conformable for the product AB if	A. Both A and B are square B. Both A and B are symmetric C. Number of rows of A = number of columns of B D. Number of columns of A = number of rows of B
1082	The additive identity of real number is	A. 1 B. 2 C. $\frac{1}{2}$ D. 0
1083	The function discontinuous at $x = 0$ is (I) $\tan x$ (II) $\cot x$ (III) $\sec x$ (iv) $\operatorname{cosec} x$	A. I & III B. I & IV C. II & IV D. II & III
1084	If for the matrix A, $A^5 = I$, then $A^{-1} =$	A. A^2 B. A^3 C. A D. None of above
1085	Question Image	
1086	The parabola $y^2 = 4ax$ open up if	A. $a < 0$ B. $a \neq 0$ C. $a > 0$ D. All are incorrect
1087	Question Image	
1088	Question Image	
1089	The distance of the point (a, b) from x-axis is	A. a B. b C. $a + b$
1090	Question Image	A. 1 B. 2 C. 3 D. 4
1091	Question Image	A. 1 B. 5 C. 7 D. 9
1092	Question Image	
1093	If $c = 2i + j + k$ and $d = -1 + 4j + 2k$, then $ c - d =$	A. $\sqrt{7}$ B. $\sqrt{41}$ C. $\sqrt{19}$ D. $\sqrt{2+7}$
1094	If the angle between two vectors with magnitude 2 and 15 is 30° then their scalar	A. $\frac{1}{2}$ B. 15 C. $\frac{1}{15}$ D. $\frac{1}{30}$

	product is	C. 30
1095	In ladder leaning against a vertical wall makes an angle of 24° with the wall, its foot is 5m from the wall, its length is	A. 5.47m B. 2m C. 7m D. 6.29m
1096	Which one is a pair of allied angles	A. $(180^\circ - \theta)$ B. $(180^\circ - \theta)$ C. $(180^\circ + \theta)$ D. None of these
1097	Φ set is the _____ of all sets	A. Subset B. Union C. Universal D. Intersection
1098	The solution of the equation $3 \tan^2 x = 1$ is _____	D. none of these
1099		A. Principle of equality of fractions B. Rule for product of fractions C. Golden rule for fractions D. Rule for quotient of fractions
1100		D. all
1101		
1102		D. none of these
1103	The equation of line passing through intersection of line $x = 0$ and $y = 0$ and the point (2,2) is	A. $y = x$ B. $y = x - 1$ C. $y = x + 1$ D. $y = x + 1$
1104	The number of permutation that can be formed from the letters of the word OBJECT is	A. 700 B. 600 C. 720 D. 620
1105		
1106	$3.5 + 5.4 = 5.4 + 3.5 = 8.9$ this property of addition is called	A. additive identity B. associative property C. commutative property D. closure property
1107	The value of $\cos(\cos^{-1} \frac{1}{2})$ is	A. $\frac{1}{2}$ B. $\frac{\sqrt{3}}{2}$ C. $-\frac{1}{2}$ D. $\frac{1}{\sqrt{2}}$
1108	The area of the rhombus whose vertices are A(0,0), B(2,1), C(3,3), D(1,2) is	A. 36 square units B. 3 square units C. 6 square units D. 18 square units
1109	If $f(x) = x^5 + x^3 + x$ the value of $f^{-1}(1)$ is:	A. 0 B. 8 C. 5 D. 9
1110	Circumcentre of the triangle, whose vertices are (0, 0), (6, 0) and (0, 4) is	A. (2, 0) B. (3, 0) C. (0, 3) D. (3, 2)
1111	The nth term of an A.P is $(3n+5)$ Its 75th term is	A. 26 B. 7 C. 21 D. Cannot be determined
1112	Derivative of strictly increasing function is always	A. Zero B. Positive C. Negative D. Both (A) and (B)

A. radius of the circle

1113	radian is the measure of the angle subtended at the centre of the circle by an arc, whose length is equal to the	B. circumference C. arc length D. tangent of the circle E. none of these
1114	The multiplicative inverse of $\frac{2}{3}$ is	A. $\frac{3}{2}$ B. $-\frac{2}{3}$ C. $-\frac{3}{2}$ D. 1
1115		A. $\frac{5}{12}$ B. $\frac{3}{8}$ C. $\frac{5}{8}$ D. $\frac{7}{4}$
1116	The set of first elements of the ordered pairs forming the relation is called its	A. domain B. range C. ordered pairs D. relation
1117	Number of permutations of n distinct objects taken r ($r \leq n$) at a time which exclude 3 ($3 \leq n$) particular objects is	A. $3! P(n, r - 3)$ B. $P(n, 3) P(n, r - 3)$ C. $P(r, r) P(n, r - 3)$ D. $P(n - 3, r)$
1118		
1119		A. $-a - b - c$ B. 1 C. 0 D. -1
1120	The cartesian system of coordinates was introduced by:	A. Euler B. Euclid C. Descartes D. MacLaurin
1121	$\tan 2\theta =$	
1122	The mid point of the line segment joining the points A(3,1) and B(-2,-4) is	A. (1, -3)
1123	The point of concurrency of the right bisectors of the sides of a triangle is called	A. incentre B. circumcenter C. ex-center D. centroid
1124	The points (5,2), (-2,3), (-3,-4) and (4,-5) are the vertices of:	A. rhombus B. Parallelogram C. rectangle D. square
1125		
1126	If $s = 2t^3 - 3t^2 + 15t - 8$ is the equation of motion of a particle, then its initial velocity is	A. 8 B. 15 C. -6 D. None
1127	If $b^2 - 4ac = 0$ then the roots of the equation are	A. Real and distinct B. Real and equal C. Imaginary D. None of these
1128	The solution set of the equation $1 + \cos x = 0$ is _____	D. none of these
1129	$\sqrt{-1b} = ?$	A. bi B. -i b C. b ² D. i $\sqrt{b}$
1130	Which of the following statement is true	A. $16^{\frac{1}{3}} \times 16^{\frac{1}{6}} = 4$ B. $9^{\frac{1}{3}} \times 9^{\frac{1}{6}} = 8^{\frac{1}{8}}$ C. $9^{\frac{1}{3}} \times 9^{\frac{1}{6}} = 9^{\frac{1}{8}}$ D. All of these
1131	The number of significant numbers which can be formed by using any number of the digits 0, 1, 2, 3, 4 but using each not more than once in each number is	A. 260 B. 356 C. 410 D. 96
1132	$f(x) = C$ is	A. identity function B. constant function C. linear function D. quadratic function

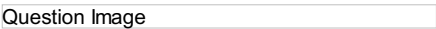
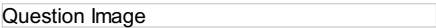
1133	The exact value of $\cos^{-1}(-1) + \cos^{-1}(1) =$	B. $-\pi$ C. $\pi/2$ D. $\pi/3$
1134	If $A = \{2m/m^3 = 8, m \in \mathbb{Z}\}$ then $A =$	A. $\{1, 8, 27\}$ B. $\{4\}$ C. $\{2, 4, 6\}$ D. $\{2, 16, 54\}$
1135		A. 1 B. 2 C. 3
1136		
1137	$3x + 4 = 0$ is	A. not inequality B. equation C. identity D. inequality
1138		B. $\sin 2x + c$ C. $-\sin 2x + c$
1139		
1140		A. n if n is even B. 0 for any natural number n C. 1 if in odd D. None of these
1141		A. Symmetric B. Skew-symmetric C. Hermitian D. Skew hermitian
1142	If l, m, n are the d.c.'s of a line, then	A. $l^2 + m^2 + n^2 = 0$ B. $l^2 + m^2 + n^2 = 1$ C. $l + m + n = 1$ D. $l = m = n = 1$
1143	a rectangular array of numbers in rows and columns is called a	A. Matrix B. Element C. Determinants D. entries
1144	Which of the following is factor of $p(x) = 2x^3 + 3x^2 + 3x + 2$?	A. $x+1$ B. $2x+1$ C. $3x+1$ D. $2x-1$
1145	There are 50 students in a class out of these 38 used desktop computers, 16 out of these used laptop. It is noted that five student neither use laptop or computer. The students having both laptop and computer are A. Based on the information find out the greatest value of A	A. 36 B. 4 C. 16 D. 30
1146	Sum of all the four forth roots of unity is	A. 1 B. -1 C. i D. 0
1147		D. None of these
1148	$\int 2x - 1/x^2 - x - 1 \, dx =$	A. $\ln(2x-1)+c$ B. $(2x-1)+c$ C. 0 D. $\ln(x^2 - 2x + 1) + c$
1149	Which of the following is a vector.	A. distance B. temperature C. energy D. acceleration
1150	$\tan 180^\circ =$	A. -1 B. 0 C. 1 D. Undefined
1151	Let A be a square matrix. Then, $1/2 (A - A')$ is	A. Skew-symmetric B. Symmetric C. Null D. None of the above
1152	The distance between two parallel lines $2x - 5y + 13 = 0$ and $-2x + 5y - 6 = 0$ is:	A. $\sqrt{29}$ B. $8/\sqrt{29}$ C. $7/\sqrt{29}$ D. $29\sqrt{7}$

1153	If $z_1 = 2 + 6i$ and $z_2 = 3 + 7i$, then which expression defines the product of z_1 and z_2 ?	A. $36 + (-32)i$ B. $-36 + 32i$ C. $6 + (-11)i$ D. $0, +(-12)i$
1154	θ and $2k\pi + \theta$ are the _____ angles	A. Quadrantal angles B. Coterminal C. Allied D. None
1155	Equation of parabola with focus $F(-3,1)$ directrix $x=3$ is	A. $(y-1)^2 = -12x$ B. $(y-1)^2 = 4x$ C. $(x+3)^2 = 4a(y-1)$ D. $y^2 = -12(x-1)$
1156	Every irrational number is	A. A real number B. A prime number C. A natural number D. An integer
1157	$(x^3 - 1/2x)^6$ is	A. $15/16 x^{²}$ B. $2/13 x^{²}$ C. $17/7 x^{²}$ D. $16/15 x^{²}$
1158	Question Image	
1159	Three unbiased coins are tossed. Then the probabilities of getting two heads is	A. $3/8$ B. $1/8$ C. $1/4$ D. None of these
1160	A circle passing through the vertices of any triangle is called	A. Circumcircle B. Incircle C. Escribed circle D. Unit circle
1161	The derivative of $1/x^m$ is:	A. $x^{^{m+1}}/m$ B. $m(x)^{^{m-1}}$ C. $(m-1)x^{^{-m}}$ D. $m/x^{^{m+1}}$
1162	The position vector of a point (x, y) in xy plane is	D. none of these
1163	If $\cos \alpha = 4/5$, then $\cos \alpha/2$	
1164	If $n \in \mathbb{Z}^+$ then $(a+x)^n$ is a/a_n	A. Finite series B. Convergent series C. Infinite series D. Divergent series
1165	$f(x) = 2^x + 3 \cdot 2^{2x} + 5$ is	A. trigonometric function B. algebraic function C. exponential function D. logarithmic function
1166	The roots of $ax^2 + bx + c = 0$ are	A. Rational $\Leftrightarrow b^2 - 4ac \geq 0$ B. Irrational $\Leftrightarrow b^2 - 4ac > 0$ C. Real $\Leftrightarrow b^2 - 4ac \neq 0$ D. Rational $\Leftrightarrow b^2 - 4ac = 0$
1167	$G = \{e, a, b, c\}$ is an Abelian group with e as identity element. The order of the other elements are	A. 2, 2, 2 B. 3, 3, 3 C. 2, 2, 4 D. 2, 3, 4
1168	Multiplicative inverse of "1" is	A. 0 B. -1 C. 1 D. $\{0, 1\}$
1169	Question Image	
1170	Question Image	
1171	$2/9, 5/7 \in \mathbb{R}, (2/9)(5/7) = 10/63 \in \mathbb{R}$ this property is called	A. Associative property B. Identity property C. Commutative property D. Closure property w.r.t multiplication
1172	For trivial solution $ A $ is	A. A B. $ A $ is non zero C. $A = 0$ D. None of these

1173	The sum of an infinite geometric series exist if	A. $r < 1$ B. $r > 1$ C. $r = 1$ D. $r = -1$
1174	The maximum value of $\sin x + \cos x$ is	
1175	$f(x) = x $ is a/an	A. Injective function B. Bijective function C. Surjective function D. Implicit function
1176	if $y=x^2$ then dy/dx equals:	A. $2x$ B. $x/2$ C. $2x^{>3}</sup>$ D. $x^{>3}</sup>/2$
1177	Question Image	A. $x = 3$ B. $x = 1/5$ C. $x = 0$ D. None of these
1178	If you are looking a high point from the ground, then the angle formed is	A. Angle of elevation B. Angle of depression C. Right angle D. Horizon
1179	If $f:A \rightarrow B$ is an injective function and second elements of no two of its ordered pairs are equal, then f is called	A. 1-1 and onto B. Bijective C. 1-1 and into D. None of these
1180	If a polynomial $P(x)$ is divided by $x - a$, then the remainder is	A. $P(0)$ B. $P(-a)$ C. $P(a)$ D. None of these
1181	Question Image	
1182	Number of terms in the expansion of $(a+x)^n$ is	A. $n - 1$ B. $n + 1$ C. $n + 2$ D. $n + 3$
1183	Domain of $\sin \theta$ is	A. Set of real numbers B. Set of complex numbers C. Set of natural numbers D. Set of even numbers
1184	Question Image	
1185	If a polynomial $P(x)$ is divided by $x + a$, then the remainder is	A. $P(a)$ B. $P(-a)$ C. $P(0)$ D. None of these
1186	The two different parts of the hyperbola are called its	A. Vertices B. Directrices C. Nappes D. Branches
1187	A quadrilateral whose diagonals are perpendicular bisector of each other is	A. Square B. Rectangle C. Rhombus D. Parallelogram E. Trapezium
1188	A matrix whose determinant is not zero is said to be	A. Singular B. Non-singular C. Adjoint D. Symmetric
1189	$w^{11} = \underline{\hspace{2cm}}$	A. 0 B. 1 C. w D. $w^{>2}</sup>$
1190	Question Image	A. Imaginary B. Rational C. Irrational D. Real numbers
1191	The transport of a square matrix is a	A. Row matrix B. Column matrix C. Square matrix D. Null matrix
1192	Which of the following is not a property of matrix multiplication?	A. Symmetric property B. Cancellation property w.r.t multiplication

1192	$\forall a, b, c \in R \quad ac = bc \Rightarrow a = b, c \neq 0$ is a	C. Reflexive property D. Transitive property
1193	If w is a cube root of unity then $1 + w + w^2 =$ _____	A. 1 B. 2 C. 0 D. -1
1194	Range of $\sec x$ is _____	A. $[-1, 1]$ B. R C. Negative real numbers D. $R = \{x \mid -1 \leq x \leq 1\}$
1195	A statement which is already false is called	A. Tautology B. Contrapositive C. Absurdity D. Universal quantifiers
1196	The domain of the function $y = \sin x$, is	A. $-\pi/2 \leq x \leq \pi/2$ B. $\pi/2 \leq x \leq \pi$ C. $-2\pi \leq x \leq 2\pi$ D. $-1 \leq x \leq 1$
1197	The term independent of x is the expansion $(x^3 + 1/x)^{12}$	A. 295 B. 495 C. 395 D. 722
1198	A function which is to be maximized or minimized is called an	A. Explicit function B. Implicit function C. Objective function D. None
1199		A. 1 B. 0 C. 3 D. -1
1200	If $x+y+z+\dots+2n = 2n+1-1 \forall n \in W$, then cube root of xyz is equal to	A. 1 B. 4 C. 2 D. 8
1201	The longer side of a parallelogram is 10 cm and the shorter is 6 cm. If the longer diagonal makes an angle 30° with the longer side, the length of the longer diagonal is	
1202		
1203	The graph of linear equation $2x + 3y = 10$	A. Parabola B. Circle C. Hyperbola D. Straight line
1204	The line through the centre and perpendicular to the transverse axis is called the	A. Major axis B. Minor axis C. Focal axis D. Conjugate axis
1205	The net of cartesian product $A \times B$ consists of	A. domain B. range C. binary relation D. ordered pair
1206	The ellipse and hyperbola are called	A. Concentric conics B. Central conics C. Both a & b D. None
1207	A subset of set of complex number whose elements are of the form $(a, 0)$ is called	A. Real number B. Complex number C. Rational number D. Irrational number
1208	$(7, 9) + (3, -5) =$	A. $(4, 4)$ B. $(10, 4)$ C. $(9, -5)$ D. $(7, 3)$
1209	The standard form of the quadratic function $f(x) = -x^2 + 4x + 2$, is	A. $(x-2)^2 + 6$ B. $-(x-2)^2 + 6$ C. $(x-3)^2 + 5$ D. $(x+4)^2 - 7$
1210	If p is false, $\sim p$ is	A. true B. not true C. equal to p D. conjunction

D. Conjunction

1211	$\sqrt{11}$ is	A. an irrational number B. Rational number C. odd number D. Negative number
1212	The no of term is the expansion of $(a+x)^{n-1}$ is	A. $n+1$ B. $n-1$ C. n D. $n-2$
1213	The tangents drawn from the point P to a circle are real and coincident if	A. P is on the circle B. P is inside the circle C. P is outside the circle D. none of these
1214	The equation $x^2 + y^2 + 2g + 2fy + c = 0$ represents a circle whose centre is :	A. (g,f) B. (-g,-f) C. (2g ,2f) D. (-2f ,-2g)
1215	$\sin(\pi/2+\theta) = \underline{\hspace{2cm}}$;	A. $\sin\theta$ B. $\cos\theta$ C. $-\sin\theta$ D. $-\cos\theta$
1216		A. 0 B. 1 D. none of these
1217	Derivative of a w.r.t x is	A. 0 B. 1 C. x D. x
1218	$ax+by+c = 0$, represents a	A. Circle B. Parabola C. Straight line D. Quadratic circle
1219		A. 0 D. undefined
1220	Any whole number can be written as a product of factors which are	A. Odd numbers B. Prime number C. Rational number D. Even number
1221	The vertex of the cone is also called	A. nappes B. axis C. rulings D. apex
1222	In the function $f: A \rightarrow B$, the elements of a are called	A. Images B. Pre-images C. ranges D. Parameters
1223	A line segment whose end points lie on a circle is called	A. the secant of the circle B. the arc of the circle C. the chord of the circle D. the circumference of the circle
1224	Which of the following diagrams represent bijective function?	
1225		
1226		A. $K/6$ B. $2K$ C. $3K$ D. $6K$
1227		A. A finite set B. An infinite set C. An empty set D. None of these
1228		A. A, B, C are coincident B. A, B, C are collinear C. Both A and B D. None of these
1229	The value of $7\pi/9$ in terms of degrees is	A. 150° B. 130° C. 135° D. 140°

1230	Question Image	
1231	The eccentricity of the conic $9x^2 - 16y^2 = 144$ is	A. $\frac{4}{5}$ B. $\frac{5}{4}$ C. $\frac{4}{3}$ D. $\frac{3}{4}$
1232	The number of ways of arranging the letter AAAAA BBB CCC D EE F in a row when no two C's are together is	
1233	Question Image	
1234	If distance of (a,b) from x-axis is 2 then	A. $a = 2$ B. $b = 2$ C. $a = b$ D. $b = 4$
1235	If p, q, r and in A.P., a is G.M. between p and q and b is G.M. between q and r, then a^2, q^2, b^2 are in	A. A.P. B. G.P. C. H.P. D. None of these
1236	Question Image	
1237	If n is any positive integer then $3 + 6 + 9 + \dots + 3n =$ _____	
1238	Question Image	
1239	Question Image	A. Addition B. Subtraction C. Multiplication D. None of these
1240	Question Image	
1241	$150^\circ =$ _____	
1242	The direction cosines of a line equally inclined with co-ordinate axes are	
1243	Question Image	
1244	Question Image	A. Only one real solution B. Exactly three real solution C. Exactly one rational solution D. Non-real roots
1245	$\forall a, b \in \mathbb{R}, ab = ba$ is a	A. Commutative law of multiplication B. Closure law of multiplication C. Associative law of multiplication D. Multiplicative identity
1246	The equation of the line through (-8, 5) having slope undefined is:	A. $y + 8 = 0$ B. $y = 8$ C. $y = x + 8$ D. $x + 8 = 0$
1247	If d_1 is the distance between (0,0) and (1,2) and d_2 is the distance between (0,0) and (-1,-2) the	A. $d_1 < d_2$ B. $d_1 > d_2$ C. $d_1 = d_2$ D. none of these
1248	Area bounded between the curve $xy=2$ and the lines $x=1$ and $x=2$	A. $\ln 2$ square units B. $\ln \sqrt{2}$ square units C. $\ln 4$ square units D. Square units
1249	Question Image	
1250	The set of the first elements of the ordered pairs forming a relation is called its	A. Function on B B. Range C. Domain D. A into B
1251	If $\pi \leq x \leq 2\pi$, then $\cos^{-1}(\cos x) =$	A. $\cos x$ B. $-x$ C. $1/x$ D. $-x$
1252	Question Image	
1253	Question Image	A. Reflexive property B. Symmetric property C. Cancellations property w.r.t. addition D. Transitive property

1254		
1255	The cube roots of 8 are	
1256	$f(x) = \sin x + \cos^2 x$ is	A. trigonometric function B. algebraic function C. exponential function D. logarithmic function
1257		A.
1258	$(\sqrt{3}+\sqrt{5})+\sqrt{7} = \sqrt{3} + (\sqrt{5} + \sqrt{7})$ property used in above is	A. Commutative property of addition B. Closure property of addition C. Additive inverse D. Associative property w.r.t to addition
1259		A. 0 B. -1 C. 1
1260	In ΔABC if $\gamma = 90^\circ$ then the Pythagoras theorem is	A. $b^2 + c^2 = a^2$ B. $a^2 + b^2 = c^2$ C. $a^2 + c^2 = b^2$ D. None of these
1261	The distance of the point $(-2, -3)$ from y-axis is	A. 2 B. -2 C. 3 D. -3
1262		B. $\tan 3x + c$ C. $\cot 3x + c$ D. $-\cot 3x + c$
1263	The roots of the equation $4x^2 - 3.2x + 32 = 0$ would include	A. 1 and 3 B. 1 and 4 C. 1 and 2 D. 2 and 3
1264	The two lines $x + y = 0$ and $2x - y + 3 = 0$ intersect at the point:	A. $(-1, 1)$ B. $(2, 3)$ C. $(1, 3)$ D. $(-1, 2)$
1265	If the angle between two vectors with magnitude 6 and 2 is 60° when their scalar product is	A. 12 B. 6 C. 3 D. 0
1266	How many necklaces can be made from 6 beads of different colours?	A. 120 B. 60 C. 24 D. 15
1267	The line through the focus and perpendicular to the directrix is called _____ of the parabola	A. axis B. focal chord C. tangent D. latus rectum
1268	Derivative of $\sin x$ w.r.t. $\sin x$ is	A. 0 B. 1 C. $\sin x$ D. $\cos x$
1269		A. A.P. B. G.P. C. H.P. D. None of these
1270	The end points of the major axis of the ellipse are called its	A. Foci B. Vertices C. Co - vertices D. None of these
1271	The number of tangents to the circle $x^2 + y^2 - 8x - 6y + 9 = 0$ which pass through the point $(3, -2)$ is	A. 2 B. 1 C. 0 D. None of these
1272		
1273	The line $y = mx + 1$ is tangent to the parabola $y^2 = 4x$ if	A. $m=1$ B. $m=2$ C. $m=3$ D. $m=4$

1274	Question Image	B. 0 C. cx D. c
1275	Question Image	
1276	The direction cosines of y-axis are	A. 1, 0, 0 B. 0, 1, 0 C. 0, 0, 1 D. 1, 1, 1
1277	Question Image	A. 2 B. 1 C. 5 D. 0
1278	The probability that a person A will be alive 15 years hence is $\frac{5}{7}$ and the probability that another person B will be alive 15 years hence is $\frac{7}{9}$. Find the probability that both will be alive 15 years hence	A. $\frac{4}{63}$ B. $\frac{5}{9}$ C. $\frac{45}{49}$ D. None of these
1279	Question Image	A. 0 B. -1 C. 1 D. 2
1280	Question Image	A. p and q B. p or q C. p implies q D. p is equivalent to q
1281	$(n + 2)(n + 1)n$ in factorial form is	
1282	Question Image	A. $n \leq \frac{8}{5}$ B. $n \leq \frac{5}{8}$ C. $ n \leq \frac{8}{5}$ D. $ n \geq \frac{8}{5}$
1283	An equation of the form $ax + by = k$ is homogeneous linear equation when	A. $b = 0, a = 0$ B. $a = 0, b \neq 0$ C. $b = -0, a \neq 0$ D. $a \neq 0, b \neq 0, k = 0$
1284	Question Image	A. [0, 0, 0] B. [1, 0, 0] C. [0, 1, 0] D. [0, 0, 1]
1285	Area of the circle with ends of a diameter at (-3,2) and (5,-6)	A. 128π sq. units B. 64π sq. units C. 32π sq. units D. None of these
1286	A sequence of number whose reciprocals form an arithmetic sequence is called	A. Geometric sequence B. Arithmetic series C. Harmonic sequence D. Harmonic series
1287	$2x = 3$ is a conditional equation it is true for	A. 2 B. 3 C. $\frac{3}{2}$ D. $\frac{2}{3}$
1288	Question Image	A. $n(A)$ B. $n(B)$ C. 0 D. 1
1289	$y = -a$ is the equation of the directrix of	A. $y^2 = 4ax$ B. $x^2 = -4ay$ C. $x^2 = 4ay$ D. $y^2 = -4ax$
1290	For trivial solution $ A $ is	A. A B. $ A = 0$ C. $A = 0$ D. $ A \neq 0$
1291	For reasoning, we have to use	A. implication B. conjunction C. induction D. proposition
1292	$4^{1+x} + 4^{1-x} = 10$ is called	A. Reciprocal equation B. Exponential equation C. Radical equation D. None of these

1293		C. $2x$ D. 2
1294		
1295	24 can be written as a product of	A. Odd factors B. Even factors C. Whole factors D. Prime factors
1296	If $f(x) = c$ then $f^{-1}(x)$ equals:	A. 1 B. 0 C. cx D. c
1297		
1298	A triangle has ____ elements	A. 3 B. 4 C. 5 D. 6
1299		A. -152 B. -252 C. 371 D. -421
1300		
1301	If x is an image of y under the function f . This can be written as	A. $y = f(x)$ B. $f(x) = 0$ C. $x = f(y)$ D. $f(y) = 0$
1302		A. 0 B. 1 C. 8 D. ><i>∞</i>
1303		A. I and III quadrants B. II and III quadrants C. I and II quadrants D. II and IV quadrants
1304		A. 45° B. 30° C. 75° D. 60°
1305		D. none of these
1306	Some of two real numbers is also a real number , this property is called:	A. Commutative property w.r.t addition B. Closure property w.r.t. addition C. Associative property w.r.t. addition D. Distributive property w.r.t addition
1307	If points $(-1, h)$, $(3, 2)$ and $(7, 3)$ are collinear then $h =$	A. 3 B. 4 C. 0 D. None of these
1308	The distance between the points $(1, 2)$ and $(2, 1)$ is	A. 3 B. 6
1309	The modulus of a vector $\vec{i} + k\vec{j}$ is:	A. $\sqrt{3}$ B. 1 C. $\sqrt{2}$ D. ∞
1310	The centre of the conic $x^2 + 16x + 4y^2 - 16y + 76 = 0$ is	A. $(0, 10)$ B. $(-8, 4)$ C. $(-8, -2)$ D. $(1, 1)$
1311	If one root of $5x^2 + 13x + k = 0$ be the reciprocal of the other root the value of k is	A. 0 B. 2 C. 1 D. 5
1312		A. An expression B. Rational fraction C. Equation D. Identity
		A. An irrational number B. Whole number

1313	3/2 is	B. whole number C. A positive integer D. A rational number
1314	Question Image	D. None of these
1315	Question Image	A. 1 B. -1 C. 0 D. None of these
1316	Which element is the additive inverse of (a, b) in Complex numbers?	A. (a, 0) B. (0, b) C. (a, b) D. (-a, -b)
1317	An experiment yields 3 mutually exclusive and exhaustive events A, B, C, if $P(A) = 2$ and $P(B) = 3$. then $P(C) =$	A. 1 / 11 B. 2 / 11 C. 3 / 11 D. 6 / 11
1318	Question Image	A. 12 B. 6 C. 8 D. none of these
1319	The additive inverse of 0 is	A. 1 B. -1 C. 0 D. Does not exist
1320	Given two numbers a and b. Let A denote the single A.M. between these and S denote the sum of n A.M.'s between them. Then S/A depends upon	A. n, a, b B. n, a C. n, b D. n
1321	The radius of the circle $2x^2 + 2y^2 - 4x + 12y + 11 = 0$ is:	A. $\sqrt{4.5}$ B. $\sqrt{11}$ C. $\sqrt{29}$ D. $\sqrt{15}$
1322	In a diagonal matrix, all entries except in diagonal are	A. similar B. Zero C. One D. Real
1323	A number H is said to be the H.M. between a and b if a, H, b are in	A. A.P. B. G. P. C. H. P. D. None of these
1324	$\tan^{-1} 1/x =$ _____	A. $\sin x$ B. $\sec^{-1} X$ C. $\cot^{-1} X$ D. None of these
1325	Question Image	D. none of these
1326	Fifteen girls compete in a race. The first three places can be taken by them in	A. 3! ways B. 12! ways C. $15 \times 14 \times 13$ ways D. 42 ways
1327	The sum of the even coefficients in the expansion $(1 + x)^n$ is	A. 2^{n-1} B. 2^{n-2} C. 2^{n-1} D. 2^n
1328	Question Image	A. Polynomial B. Equation C. Improper rational fraction D. Proper rational fraction
1329	The constant distance of all points of the circle from its centre is called the	A. Radius of the circle B. Secant of the circle C. Chord of the circle D. Diameter of the circle
1330	Question Image	
1331	How many 3 digit numbers can be formed by using each one of the digit 2, 3, 5, 7, 9 only once?	A. 15 B. 24 C. 60 D. 120
1332	Question Image	
	The series obtained by adding the terms of a	A. Infinite series B. Arithmetic series

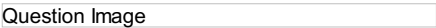
1333	The series obtained by adding the terms of a geometric sequence is called	B. Arithmetic series C. Geometric series D. Harmonic series
1334	Question Image	
1335	One minute is denoted by	A. $1^{>0}$ B. 1' C. 1" D. None of these
1336	$ax + by < c$ is linear inequality in	A. four variables B. three variables C. two variables D. one variable
1337	Range of $\tan\theta$ is	A. Set of complex numbers B. Set of real numbers C. Set of odd numbers D. Set of positive integers only
1338	The product of cube roots of unity is	A. Zero B. 1 C. -1 D. None of these
1339	Question Image	
1340	Question Image	
1341	The projection of $-2i + 3j + 7k$ on $2j + k$ is	A. $\frac{13}{5}$ B. $\frac{13}{4}$ C. $\frac{13}{\sqrt{5}}$ D. 13
1342	Which of the following is the subset of all sets	A. Φ B. $\{1, 2, 3\}$ C. $\{\Phi\}$ D. $\{0\}$
1343	Question Image	A. 1 D. -1
1344	The velocity of a particle moving along a straight line is given by $v = 3t + t^2$. The acceleration of the particle after 4 seconds from the start is	A. 4 B. 11 C. 26 D. None
1345	Question Image	
1346	The consecutive terms of a progressions are 30, 24, 20. The next term of the progression is	
1347	The distance of the plane $2x - 3y + 6z + 14 = 0$ from the origin is	A. 14 B. 2 C. -2 D. 11
1348	Domain of $\sin x$ is _____	
1349	Question Image	
1350	The equation of the tangent at vertex to the parabola is $y^2 = -8(x - 3)$	A. $y = 0$ B. $x = 3$ C. $x = 1$ D. $x = 5$
1351	Question Image	A. Less than 1 B. Equal to 1 C. Greater than 1 but less than 2 D. Greater then or equal to 2
1352	The distance between the points (2, 2) and (3, 3) is	A. 10 C. 5 D. 2
1353	Question Image	
1354	Question Image	A. $A(\text{color: rgb(34, 34, 34); font-family: \"Times New Roman\"; font-size: 24px; text-align: center; background-color: rgb(255, 255, 224);}>\alpha</i>) - A(\text{color: rgb(34, 34, 34); font-family: \"Times New Roman\"; font-size: 24px; text-align: center; background-color: rgb(255, 255, 248);}>\beta</i>)$ B. $A(\text{font-family: \"Times New Roman\"; font-size: 24px; color: rgb(34, 34, 34); text-align: center; background-color: rgb(255, 255, 224);}>\alpha</i>) + A(\text{font-family: \"Times New Roman\"; font-size: 24px; color: rgb(34, 34, 34); text-align: center; background-color: rgb(255, 255,$

248);"><i> β </i>

C. A(<i style="text-align: center;"> α </i>-<i style="text-align: center;"> β </i>)

D. A(<i style="text-align: center;"> α </i>+<i style="text-align: center;"> β </i>)

1355		
1356		D. none of these
1357		A. 0 B. 1 C. 2
1358	if $x \in D_f$ and $f^{-1}(x)$ exists, then f is said to be	A. zero at x B. Differentiable at x C. Continuous at x D. None of these
1359		
1360		A. 0 B. 1 D. -1
1361		A. $\operatorname{cosec} x + c$ B. $-\operatorname{cosec} x + c$ C. $-\sec x + c$ D. $\sec x + c$
1362	The distance of a point $(x \cos \theta, x \sin \theta)$ from origin is:	A. x B. $x \tan \theta$ C. $-\tan \theta$ D. $-\cot \theta$
1363		
1364	The eccentricity of parabola is:	A. 1 B. 0 C. Greater than 1 D. Less than 1
1365	$\sin 50^\circ - \sin 70^\circ + \sin 10^\circ$ is equal to	A. 1 B. 0 C. $1/2$ D. 2
1366	Roots of the equation $x^2 - x = 2$ are	A. $\{2, -1\}$ B. $\{1, 0\}$ C. $\{2, 1\}$ D. $\{-2, 1\}$
1367	Period of $\cos x$ is _____	
1368		A. $e^{x^2} + c$ B. $e^{-x^2} + c$ C. $x e^{x^2} + c$ D. not possible
1369	The slope of y-axis is	A. 0 B. undefined C. 1
1370	The number of the diagonals of a 6 sided figure is	A. 15 B. 21 C. 9 D. 6
1371	If the number of elements in set A is n , and in set B is m , then the number of elements in $A \times B$ will	A. n^{m^2} B. m^{n^2} C. $m \times n$ D. $m + n$
1372	If $(1+x)^n = C_0 + C_1x + C_2x^2 + \dots + C_nx^n$ then $C_0C_2 + C_1C_3 + C_2C_4 + \dots + C_{n-2}C_n =$	
1373	A function $F(x)$ is called even if	A. $F(x) = F(-x)$ B. $F(x) = F(-x)$ C. $F(x) = -F(x)$ D. $2F(x) = 0$
1374	If a is any real number and $a = a$ is called	A. symmetric property B. Trichotomy Properties C. Transitive Property D. Reflexive Properties
1375	$3j \cdot k \times i$	A. 0 B. 1 C. 3 D. 2

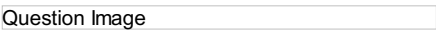
1376	Power set of difference set N-W is	A. Empty set B. Infinite set C. Singleton set D. $\{0, \varnothing\}$
1377	The transport of a null matrix is	A. Row matrix B. Column matrix C. Square matrix D. Null matrix
1378	The equation of the sphere passing thro' (0, 0, 0), (a, 0, 0), (0, b, 0), (9, 0, c) is	A. $x^2 + y^2 + z^2 + 2ax + 2by + 2cz = 0$ B. $x^2 + y^2 + z^2 - 2ax - 2by - 2cz = 0$ C. $x^2 + y^2 + z^2 - ax - by - cz = 0$ D. $x^2 + y^2 + z^2 + ax + by + cz = 0$
1379	The term involving x^4 the expansion $(3-2x)^7$ is	A. $217x^4$ B. $15120x^4$ C. $313x^4$ D. $-25x^4$
1380	Domain of $2 \cos x$ is _____	A. $[-2, 2]$ B. $\mathbb{R}$ C. Negative real numbers D. None of these
1381		
1382	Every subset of a finite set is	A. Disjoint B. Null C. Finite D. Infinite
1383	If the elevation of the sun is 30° , then the length of the shadow cast by a tower of 150 ft height is	
1384		A. 36 B. 360 C. 24 D. 6
1385		A. $\sec 5x + c$ B. $-\sec 5x + c$
1386	$w^{15} =$ _____	A. 0 B. 1 C. w D. w^2
1387		A. 0 B. -1 C. $1/2$ D. 1
1388		
1389	The value of n, when ${}^nP_2 = 20$ is	A. 3 B. 4 C. 6 D. 5
1390	If $n(A) = n$ then $n(P(A))$ is	A. $2n$ B. n^2 C. $n/2$ D. 2^n
1391	If $y = \sin(ax + b)$, then fourth derivative of y with respect to x =	A. $a^4 \cos(ax + b)$ B. $a^4 \sin(ax + b)$ C. $-a^4 \sin(ax + b)$ D. $a^4 \tan(ax + b)$
1392	The value of x, and y, when $(x + iy)^2 = 5 + 4i$	A. $X = 2, y = -1$ B. $X = -2, y = 1$ C. $X = 2, y = -1$ D. $X = 2, y = 2$
1393	Equation of normal to the circle $x^2 + y^2 = 25$ at $(5\cos\theta, 5\sin\theta)$	A. $x\cos\theta + y\sin\theta = 5$ B. $x\cos\theta - y\sin\theta = 0$ C. $x\sin\theta - y\cos\theta = 0$ D. None of these
1394		
1395	$56^\circ =$radians	A. 1.25 B. 2.56 C. 95 D. 0.98

1396	The distance of the point (-2, -3) from the origin is	A. 2 B. -5 C. -3
1397	$\sqrt{25}$ is a number	A. Rational B. Irrational C. Natural D. Odd
1398	The line $y = 4x + c$ touches the hyperbola $x^2 - y^2 = 1$ if	
1399	$(2 + w)(2 + w^2) = \underline{\hspace{2cm}}$	A. 1 B. 2 C. 3 D. 0
1400	The three noncollinear points through which a circle passes are known, then we can find the:	A. Variables x and y B. Value of x and c C. three constants f, g and c D. inverse of the circle
1401	The function denoted by $1/f$ called the	A. Reciprocal function B. Inverse function C. Constant function D. Reverse function
1402	(-28, 12) divides the join of A(-6, 3) and B(5, -2) in ratio	A. 1:2 B. 3:2 C. 2:3 D. 2:1
1403	Extraction of square root of a given number is a	A. unary operation B. binary operation C. group D. inverse function
1404	Roots of the equation $9x^2 - 12x + 4 = 0$ are	A. Real and equal B. Real and distinct C. Complex D. None of these
1405	PQ is a post of given height a, and AB is a tower at some distance; α and β are the angles of elevation of B, the top of the tower, at P and Q respectively. The height of the tower and its distance from the post are	
1406		A. An empty set B. Universal set C. A singleton set D. None of these
1407	The general equation of circle $x^3 + y^3 + 2gx + 2fy + c = 0$, contains:	A. Three independent variables B. Two independent constants C. Three independent parameters D. Three independent constants
1408	Sum of first n terms of an arithmetic series is	
1409		A. A B. B C. U D. None of these
1410		
1411	A series consisting of an unlimited number of terms is termed as an	A. Finite sequence B. Infinite sequence C. $\sup$ Infinite series $\sup$ D. geometric sequence
1412	A declarative statement which may be true or false but not both is called a	A. Hypothesis B. Proposition C. implication D. conjunction
1413	The converse and Inverse are	A. Equivalent to each other B. Opposite to each other C. Equal to each other D. Not Equal to each other
1414	While writing his books on geometry, Euclid used	A. inductive method B. deductive method C. implication D. ...

		U. proposition
1415	The graph of a quadratic function is	A. Circle B. Ellipse C. Parabola D. Hexagon
1416	The greater part of our knowledge, is based on	A. Deduction B. Induction C. Conjunction D. Disjunction
1417	Question Image	
1418	The value of $\sin^{-1} 5/13$ is equal to	A. $\cos 5/13$ B. $\tan^{-1} 5/12$ C. $\cos^{-1} 5/12$ D. $2 \cos^{-1} 4/5$
1419	Question Image	A. 6, -12, -18 B. -6, 4, 9 C. -6, -4, -9 D. -6, 12, 18
1420	For any set B, $B \cup B'$ is	A. Is set B B. Set B' C. Universal set D. None of these
1421	Question Image	
1422	Question Image	
1423	If C is the mid point of AB and P is any point outside AB, then	
1424	Question Image	
1425	Question Image	
1426	If distance between (3,b) and (0,0) is 3 then b = _____	A. 3 C. 9 D. 0
1427	The range of the tangent function is	A. all real numbers B. $-1 \leq x \leq 1$ C. natural number D. $z^{-1} + z$
1428	Question Image	
1429	A and B be two square matrices and if their inverse exist, the $(AB)^{-1} =$	A. $A^{-1} B^{-1}$ B. AB^{-1} C. $A^{-1} B$ D. $B^{-1} A^{-1}$
1430	Question Image	
1431	Let S_n denote the sum of the first n terms of an A.P. If $S_{2n} = 3 S_n$; S_n is equal to	A. 4 B. 6 C. 8 D. 10
1432	Question Image	
1433	The central angle of an arc of a circle whose length is equal to the radius of the circle is called one	A. Degree B. Second C. Minute D. Radian
1434	If one root of the equation $x^2 - 3x + a = 0$ is 2 then a = _____	A. 0 B. 1 C. 2 D. 3
1435	The period of $\tan x/7$ is	A. 3π B. 7π C. 15π D. 5π
1436	Period of $\sec x$ is _____	
1437	Question Image	
1438	The domain of the principle cos function is	

A. $x \neq 0, y = 0$

1439	If $z=(x,y)$ then z has no multiplicative inverse when	B. $x = 0, y = 0$ C. $x = 0, y \neq 0$ D. None of these
1440	The slope of the normal at the point $(at^2, 2at)$ of the parabola $y^2 = 4ax$ is	A. $1/t$ B. t C. $-t$ D. $-1/t$
1441	$A = B$ if	D. A is equivalent to B
1442	If (a, b) is the mid-point of a chord passing thro' the vertex of the parabola $y^2 = 4x$, then	A. $a = 2b$ B. $2a = b$ C. $a^2 \leq 2b$ D. $2a = b^2$
1443	Decimal part of irrational number is	A. Terminating B. Repeating only C. Neither repeating nor terminating D. Repeating and terminating
1444	if $a_9=19, a_{31}$ are the 6th and 9th term of an A.P. and $d=4$ is the common difference, then 18th term of the sequence is	A. 65 B. 67 C. 71 D. 75
1445	$\sim p$ is the	A. implication of p B. disjunction of p C. negation of p D. conjunction of p
1446	The circle $(x - 2)^2 + (y + 3)^2 = 4$ is not concentric with the circle	A. $(x - 2)^2 + (y + 3)^2 = 9$ B. $(x + 2)^2 + (y - 3)^2 = 4$ C. $(x + 2)^2 + (y - 3)^2 = 8$ D. $(x - 2)^2 + (y + 3)^2 = 5$
1447	If $A = \{x / x \in R \wedge x^2 - 16 = 0\}$ then $A =$	A. $-x$ B. Infinite set C. Φ D. $\{-4, 4\}$
1448	If a cone is cut by a plane perpendicular to the axis of the cone, then the section is a	A. parabola B. circle C. hyperbola D. ellipse
1449		A. $-\cos x$ B. $\sin x$ C. $-\sin x$ D. $\sec x$
1450	The transport of a rectangular matrix is a	A. Square matrix B. Rectangular matrix C. Row matrix D. Column matrix
1451		
1452	Multiplying each side of an inequality by (-1) will:	A. Not effect B. Change the sign C. Become zero D. Not defined
1453		
1454	The function $f : x \rightarrow y$ defined as $f(x) = \alpha \forall x \in X, \alpha \in y$ is called	A. Constant function B. Polynomial function C. Identity function D. Linear function
1455		
1456	If $x - 1$ is a factor of $x^4 - 5x^2 + 4$ then other factor is	A. $(x + 2)^2(x - 1)$ B. $(x + 2)(x - 1)^2$ C. $(x + 2)(x^2 - x - 2)$ D. $(x + 2)^2(x - 1)^2$
1457		A. 11 B. 61 D. 1
1458	If the radius of a circle is increased by 1 then area of circle will be	A. πr^2 B. $\pi(r+1)^2$ C. $\pi r^2 + 1$ D. $2\pi(r+1)$
1459	If two matrices have the same order and if their corresponding elements are equal then	A. idempotent B. nilpotent

1459	corresponding elements are also equal, then the matrices are	C. identity D. None of these
1460	A triangle has six	A. side B. elements C. angle D. tangents
1461	If a, b, c are in A.P., then $3^a, 3^b, 3^c$ are in	A. A.P. B. G.P. C. H.P. D. None of these
1462	If the roots of $ax^2 + bx + c = 0$ are equal in magnitude but opposite in sign, then	A. $a = 0$ B. $b = 0$ C. $c = 0$ D. None of these
1463	Range of $3 \cot x$ is _____	A. $[-1, 1]$ B. $[-3, 3]$ C. $\mathbb{R}$ D. None of these
1464	The contra positive of $p \rightarrow q$ is	A. $q \rightarrow p$ B. $\sim q \rightarrow \sim q$ C. $\sim p \rightarrow \sim q$ D. None of these
1465	The solution of the quadratic equation $x^2 - 7x + 10 = 0$, is	A. 2 B. 5 C. 2, 5 D. 7
1466	If $f(x) = x^{2/3}$ then $f^1(x)$ at $x = 8$ equals:	A. 8 B. $1/8$ C. $1/3$ D. $2/3$
1467	If a, b, c, d, e, f are in A.P., then e-c is equal to	A. $2(c - a)$ B. $2(f - d)$ C. $2(d - c)$ D. $d - c$
1468		A. bijective function B. into function C. onto function D. surjective
1469		
1470	A matrix with a single column is called	A. Column matrix B. Row matrix C. Identity matrix D. Null matrix
1471	$\sin^2 \alpha \cos^2 \alpha =$	A. -1 B. 0 C. 1 D. None of these
1472		A. 1760 B. -193 C. 223 D. none of these
1473		
1474	The locus of the point of intersection of tangents to an ellipse at two points, sum of whose eccentric angles is constant is	A. A parabola B. A circle C. An ellipse D. A st. line
1475		A. 3 B. 2 C. 8 D. 0
1476	The 7th term of the A.P 7, 11, 15, is	A. 24 B. 31 C. 26 D. 23
1477	Three points (-2, 2) (8, -2) and (-4, 3) are vertices of a :	A. Isosceles triangle B. right-angled triangle C. Equilateral triangle D. Rectangle
	The eccentricity of ellipse becomes zero, then it	A. a parabola B. a straight line

1478	The eccentricity of ellipse becomes zero, then it takes the form of:	B. a straight line C. a circle D. None of these
1479	The distance of point P(x,y) from focus in a parabola $y^2 = 4ax$, is:	A. 2a B. a C. $x + a$ D. $x - a$
1480	Question Image	
1481	The surface generated by lines, consists of two parts, called:	A. vertex B. apex C. nappes D. axis
1482	Domain of $y = \sec x$ is	A. All real numbers except $\pi/2 + n\pi$ B. R C. All negative integers D. None of these
1483	The multiplicative inverse of x^{-1} is	A. x B. a^{-2} C. 0 D. 1
1484	In R the left cancellation property w.r.t addition is	
1485	In any triangle ABC, with usual notation $a \sin \beta =$ _____;	A. $b \sin \alpha$ B. $b \sin \beta$ C. $a \sin \alpha$ D. None of these
1486	The first three terms in the expansion of $(1 - x)^{-3}$ are	A. $1 + 3x + 6x^2$ B. $1 - 3x + 6x^2$ C. $-3 - 3x - 6x^2$ D. $1 - 3x - 6x^2$
1487	$\sin 2\alpha =$	
1488	Gooch crucible is made of :	A. Brass. B. Porcelain. C. Bronze. D. Gold.
1489	$\sqrt{2}$ is a number	A. Rational B. Irrational C. Even D. Odd
1490	$\{x x \in R \wedge x \neq x\}$ is a	A. Infinite set B. Null set C. Finite set D. None of these
1491	$\sin^{-1}(\sin 2\pi/3) =$	A. $\pi/2$ B. $2\pi/3$ C. $-3\pi/2$ D. $\pi/3$
1492	Question Image	
1493	Question Image	
1494	The number of values of x in the interval $[0, 5\pi]$ satisfying the equation $3 \sin^2 x - 7 \sin x + 2 = 0$ is	A. 0 B. 5 C. 6 D. 10
1495	$(x+a)(x+b)(x+c)(x+d) = k, k \neq 0$ is reducible to quadratic form only if	A. $a+b=c+d$ B. $a+c=b+d$ C. $a+d=b+c$ D. All are correct
1496	$\cos \frac{\theta}{2} =$	
1497	Group of none-singular matrices under multiplication is	A. None-Abelian group B. Semi group C. Abelian group D. None of these
1498	Question Image	A. (g,f) B. (-g,f) C. (g,-f) D. (-g,-f)

1499	The proposition $S(n)$ is true $\forall n \in \mathbb{N}$, $S(k+1)$ true when _____ is true	A. $S(1)$ B. Both a & c C. $S(k)$ D. None
1500	If $x^3 - x^2 + 5x + 4$ is divided by $x - 2$, then the remainder is	A. 0 B. 2 C. 18 D. 14
1501	Question Image	
1502	The statements of the form "If p then q" are called	A. hypothesis B. conditional C. disjunction D. conjunction
1503	The points $(-1, 3)$, $(3, 0)$ are the vertices of:	A. Right-angled triangle B. Isosceles triangle C. Equilateral triangle D. square
1504	If $\sin A = \cos A$, $0^\circ < A < 90^\circ$ then A is equal to	A. 1 B. $1/2$ C. 0 D. None of these
1505	Logic in which there is scope of third or fourth possibility is called.	A. non-Aristotlian logic B. Aristotlian logic C. Postulates D. induction logic
1506	The number of solution of the equation $\tan x + \sec x = 2 \cos x$ lying in the interval $[0, 2\pi]$ is	A. 0 B. 1 C. 2 D. 3
1507	Which of the following is a scalar	A. weight B. force C. speed D. momentum
1508	Question Image	
1509	The matrix A is Hermitian when $(A)^* =$	A. A B. -A C. A D. A'
1510	A combination lock on a suitcase has 3 wheels each labeled with nine digits from 1 to 9. If an opening combination is a particular sequence of three digits with no repeats, the probability of a person guessing the right combination is	A. $1 / 500$ B. $1 / 504$ C. $1 / 252$ D. $1 / 250$
1511	Question Image	A. A rational number B. A irrational number C. An even integer D. A factor of 36
1512	Question Image	A. 0 B. 1 C. $1/2$
1513	Arithmetic mean between 14 and 18 is	A. 16 B. 17 C. 15 D. 32
1514	Question Image	
1515	Question Image	
1516	Empty set is	A. Not subset of every set B. Finite set C. Infinite set D. Not the member of real numbers
1517	Question Image	
1518	Question Image	
1519	Question Image	
1520	Question Image	

1521	Question Image	B. 0 C. 1 D. undefined
1522	The element range of sequence are called	A. Series B. progression C. Members D. Terms
1523	An indicated sum of terms of a sequence is represented by	A. S_n B. a_n C. $S(n)$ D. $\{S_n\}$
1524	0 (zero) is	A. An irrational number B. A rational number C. A negative integer D. A positive number
1525	Question Image	
1526	If the points (a,b), (x,y) and (a-x, b-y) are collinear, then $ay =$	A. bx B. $b-y$ C. $a-x$ D. x
1527	Question Image	A. 6 C. 20 D. 0
1528	The equation of the normal to the circle $x^2 + y^2 = 25$ at (4, 3) is	A. $3x - 4y = 0$ B. $3x - 4y = 5$ C. $4x + 3y = 5$ D. $4x + 3y = 25$
1529	Question Image	A. 5 B. 25 D. 3
1530	The solution set of the equation $\tan^{-1}x - \cot^{-1}x = \cos^{-1}(2 - x)$ is	A. $[0, 1]$ B. $[-1, 1]$ C. $[1, 3]$ D. None of these
1531	If $f(x) = x^3 - 2x^2 + 4x - 1$ then $f(0)$ is	A. 0 B. 1 C. -1 D. none of these
1532	Question Image	
1533	If t is the parameter for one end of a focal chord of the parabola $y^2 = 4ax$, then its length is	
1534	If the angle between two vectors $\underline{u}$ and $\underline{v}$ is 0 or π , then the vectors $\underline{u}$ and $\underline{v}$ are:	A. Orthogonal B. Collinear C. Perpendicular D. None of these
1535	The solution of differential equation:	A. $\frac{dy}{dx} + \frac{y}{x} = x^{\sup{2}}$ is : B. $4xy = x^{\sup{4}} + c$ C. $4x = x^{\sup{4}} + c$ D. $4y = x^{\sup{4}} + c$ E. $4x = 4x^{\sup{3}} + c$
1536	Which of the following statement, is true	A. Lahore is in Punjab and $5 > 7$ B. Lahore is the capital of Pakistan and $3 < 23$ C. Lahore is capital of Sindh and $2 + 2 = 7$ D. Lahore is the capital of Sindh or $2 + 2 = 4$
1537	The statement that a group can have more than one identity elements is	A. True B. False C. Fallacious D. Some times true
1538	A vertical pole is 8m high and the length of its shadow is 6m. The angle of elevation of the sun of the moment is	A. 57° B. 48° C. 27° D. 53°
1539	Range of $\cos \theta$ is	
1540	Question Image	D. none of these
1541	Vector additon is:	A. Commutative B. Associative C. Commutative and Associative

C. Commutative and Associative
D. None of these

1542	The position vector of the point P(a, b, c) is	
1543	The set {-1, 1} is closed under the binary operation of	A. Addition B. Multiplication C. Subtraction D. Division
1544	π is the ration of	A. Area of a circle to its diameter B. Area of a circle to its radius C. Circumference of a circle to its diameter D. Circumference of circle to its radius
1545	Question Image	
1546	Question Image	
1547	Question Image	A. $(x^3 - 3x^2)^8 + c$ D. $3x^2 - 6x + c$
1548	If $f(x) = x^3$ then $f(-2)$ is	A. -2 B. -4 C. -8 D. 8
1549	The sum of the coefficient in the expansion of $(a + x)^5$ is	A. 32 B. 16 C. 8 D. 5
1550	Question Image	A. 184 D. none of these
1551	The equation of the circle witch centre (-3, 5) and radius 7 is	A. $(x-3)^2 + (y+5)^2 = 7^2$ B. $(x-3)^2 + (y-5)^2 = 7^2$ C. $(x+3)^2 + (y+5)^2 = 7^2$ D. $(x+3)^2 + (y-5)^2 = 7^2$
1552	$i^{-(4n+2)} = \dots\dots\dots$	A. 1 B. i C. -1 D. -i
1553	Question Image	
1554	A polynomial of arbitrary degree	A. $f(x) = 0$ B. $f(x) = x$ C. $f(x) = a$ D. $f(x) = ax + b, a \neq 0$
1555	The factorial of a positive integers is a (an)	A. Rational number B. Positive integer C. Real number D. None
1556	What is the period of $\sin 2x/3 \cos 4x$?	A. π B. 2π C. $\pi/2$ D. $\pi/3$
1557	Question Image	
1558	Question Image	
1559	The sum of co-efficient in $(1+x-3x^2)^{4163}$ is	A. 0 B. 1 C. -1 D. None
1560	$d/dx (\operatorname{cosec} x)$	A. $-\sec x \tan x$ B. $\sin x \cos x$ C. $-\csc x \cot x$ D. $2\sin x \cos x$
1561	The maximum value of $\sin \theta \cos \theta$ is	A. 1 B. $1/2$ C. $1/4$ D. $1/6$
1562	In $(x + iy)$, y is called as	A. Imaginary part B. Complex number C. Real part D. None of above
1563	Question Image	

1564	$f(x) = x^3$ is:	A. an odd function B. an even function C. an implicit function D. a quadratic function
1565	The area of a sector of a circular region of radius r is	A. $2\pi r$ B. πr^2 C. $\frac{1}{2}\pi r^2$ D. $\pi/6$
1566	Question Image	A. Trichotomy property B. Additive property of inequality C. Transitive property D. Multiplicative property
1567	Eight chairs are numbered 1 to 8. Two women and three men wish to occupy one chair each. First, the women choose the chairs from amongst the chairs marked 1 to 4 and then the men select the chairs from amongst the remaining. The number of possible arrangement is	A. ${}^6P_3 \times {}^4P_2$ B. ${}^4P_2 \times {}^6P_3$ C. ${}^4P_2 \times {}^6P_3$ D. None of these
1568	Question Image	D. none of these
1569	Two balanced dice are tossed once, the sample space when the integers on the faces of two dice are the same is	A. $\{(1, 1), (2, 2), (3, 3)\}$ B. $\{(4, 4), (5, 5), (6, 6)\}$ C. $\{(1, 1), (2, 2), (3, 3), (4, 4), (5, 5), (6, 6)\}$ D. None of these
1570	The slope of x-axis is	A. 0 B. undefined C. 1
1571	$x^2 + x - 5 = 0$ is	A. A polynomial B. An inequality C. An identity D. None
1572	The value of x which is unchanged by the mapping in the function defined by $f : x \mapsto x^2 + 5x - 5$ for $x > 0$ is	A. 1 B. 5 C. -5 D. -1
1573	If $y = 3x + 2\cos x$, then $dy/dx =$	A. $3 - 2\sin x$ B. $3 - t \sin x$ C. $3x^2 - 2\sin x$ D. $3(1 - 4\sin x)$
1574	On simplifying the express in $\sin 2O / 1 + \cos 2O$ the result is.	A. $\sin O$ B. $\cotan O$ C. $\tan O$ D. $\sec O$
1575	The two vertices of a triangle are $(-2, 4)$ and $(5, 4)$. If its centroid is $(5, 6)$, then third vertex is:	A. $(-10, 12)$ B. $(12, -10)$ C. $(12, 10)$ D. $(10, 12)$
1576	The set $(\mathbb{Z}, +)$ forms a group	A. Forms a group w.r.t addition B. Forms a group w.r.t multiplication C. Non commutative group w.r.t multiplication D. Doesn't form a group
1577	The line $2x + \sqrt{6}y = 2$ is a tangent to the curve $x^2 - 2y^2 = 4$ The point of contact is	A. $(\sqrt{6}, 1)$ B. $(2, 3)$ C. $(7, -2\sqrt{6})$ D. $(4, -\sqrt{6})$
1578	In the expansion of $(a + x)^n$ the general term T_{r+1} is	
1579	The principal value of $\sin^{-1}(-1/2)$	A. $\pi/3$ B. $\pi/4$ C. $\pi/6$ D. $-\pi/6$
1580	The sum of the focal distance from any point on the ellipse $9x^2 + 16y^2 = 144$ is	A. 32 B. 16 C. 18 D. 8
1581	If $n \in \mathbb{N}$, then $n(n+3)$ is always	A. Multiple of 3 B. Multiple of 6 C. odd D. even

1582	x-axis divides the line segment joining points (2,-3) and (5,6) in the ratio:	A. 2 : 1 B. -2 : 1 C. 1 : 2 D. -1 : 2
1583	The equation of the parabola with directrix $x = 2$ and the axis $y = 0$ is	A. $y^2 = 8x$ B. $y^2 = -8x$ C. $y^2 = 4x$ D. $y^2 = -4x$
1584	The condition for polynomial equation $ax^2 + bx + c = 0$ to be quadratic is	A. $a > 0$ B. $a < 0$ C. $a \neq 0$ D. $a \neq 0, b \neq 0$
1585	$f(x) = 1$ is	A. identity function B. constant function C. linear function D. quadratic function
1586	$\sin^{-1} x =$	A. $\tan^{-1} x$ B. $\operatorname{Cosec}^{-1} x$ C. $\operatorname{Cosec} x$ D. $\operatorname{cosec}^{-1}(1/x)$
1587	If $\triangle ABC$ is right, law of cosine reduce to	A. Law of sine B. Law of tangent C. Phthogorous theorem D. Hero's formula
1588	The identity element with respect to subtraction is	A. 0 B. -1 C. 0 and 1 D. None of thes
1589	if $\tan \theta = 8/15$ and $\cos \theta < 0$, then $\csc \theta =$	A. $-8/15$ B. $15/8$ C. $3/15$ D. $-17/8$
1590	For different values of k equation $4x+5y=k$ represents	A. Parallel lines B. Lines parallel to x -axis C. Perpendicular lines D. Lines parallel to y -axis
1591		A. 0 B. 1 C. 2 D. 3
1592		
1593		
1594		
1595		A. 1 B. 2 C. 3 D. 4
1596	The number of subsets of a set having three elements is	A. 4 B. 6 C. 8 D. none of these
1597	Multiplicative inverse of 0 is	A. 0 B. 1 C. +-1 D. Does not exist
1598		
1599	Every real number is	A. A complex number B. A rational number C. A natural number D. A prime number
1600	Three integers are chosen at random from the first 20 integers. Then probability that their product is even, is	A. $2/19$ B. $3/29$ C. $17/19$ D. $4/19$
1601	For non-trival solution $ A $ is	A. non zero B. $A = 0$ C. $ A = 0$ D. $At = 0$

1602	Question Image	
1603	A person standing on the bank of a river finds that the angle of elevation of the top of a tower on the opposite bank is 45° . then which of the following statements is correct?	A. Breadth of the river is twice the height of the tower B. Breadth of the river an the height of the tower are the same C. Breadth of the river is half of the height of the tower D. None of these
1604	Only one of the root of $ax^2 + bx + c = 0$, $a \neq 0$ is zero if	A. $c = 0$ B. $c = 0, b \neq 0$ C. $b = 0, c = 0$ D. $b = 0, c \neq 0$
1605	Question Image	
1606	Question Image	
1607	Question Image	
1608	Range of cosec x is _____	A. $\{-1, 1\}$ B. R C. Negative real numbers D. $R - \{x \mid -1 \leq x \leq 1\}$
1609	A tower subtends an angle of 30° at a point distant d from the foot of the tower and on the same level as the foot of the tower. At a second point, h vertically above the first, the angle of depression of the foot of the tower, is 60° . The height of the tower is	A. $h/3$ B. $h/3d$ C. $3h$ D. $3h/d$
1610	Question Image	A. Multiplication property B. Additive property C. Trichotomy property D. Transitive property of inequality
1611	If the angle of a triangle are in the ratio 2 : 3 : 7, the triangle is	A. Obtuse B. Acute C. Right angle D. Isosceles
1612	The seventh term of $(x^3 + 1/x)^8$ is	A. 71 B. -22 C. 27 D. 28
1613	Conjunction of two statements p and q is denoted symbolically as	
1614	If $a(p+q)^2 + bpq + c = 0$ and $a(p+r)^2 + 2bpr + c = 0$, then qr equals	A. $p^2 + c/a$ B. $p^2 + a/c$ C. $p^2 + c/a$ D. $p^2 - c/a$
1615	General solution of $1 + \cos x = 0$ is	
1616	Question Image	
1617	$(f \circ g)'(x) = f'(g(x))g'(x)$ is derivative by	A. Chain rule B. Reciprocal rule C. Power rule D. Product rule
1618	The vertices of the ellipse $x^2 + 4y^2 = 16$ are	
1619	the largest degree of the terms in the polynomials is called	A. terms of the polynomial B. degree of a polynomial C. co-efficient D. monomial
1620	The point P (5,8) and the origin lie on the side of the line $3x + 7y + 15 = 0$	A. Same side B. P above and origin below C. Opposite side D. P below and origin above
1621	If $w + w^2$ is a root of $(x+1)(x+2)(x+3)(x+4) = k$, then	A. $k=0$ B. $k=1$ C. $k=w$ D. $k=w^2$
1622	Let $P(x_1, y_1)$ and $Q(x_2, y_2)$ be two points in the co-ordinate plane. Let d = distance between P and Q	
1623	Question Image	
1624	Question Image	A. $4A - 3I$ B. $3A - 4I$

1624		C. A - I D. None of these
1625		
1626	What is the probability of being born on Wednesday?	A. 1/7 B. 1/2 C. 1/3 D. 1/8
1627	The equation of the circle with centre origin and radius r is	A. $x^2 + y^2 = 1$ B. $x^2 + y^2 = r^2$ C. $x^2 + y^2 = 0$ D. $x^2 - y^2 = r^2$
1628		A. An ellipse B. A parabola C. A circle D. A hyperbola
1629	The fifth term of $(a+2x)^{17}$ is	A. $4013 x^3 a^{13}$ B. $2208 a^{13} x^{12}$ C. $223 x^7 a^{18}$ D. $38080 a^{13} x^{12}$
1630	Let f be real valued function continuous in the interval $(x, x_1) \subseteq D_f$ (the domain of f), then $f(x_1) - f(x)/x_1 - x$ represents:	A. Instantaneous rate B. Average rate of change C. Differential coefficient D. None of these
1631	Which of the following function form 1 to itself are bi-jjective	A. $F(x) = x + 3$ B. $F(x) = x^5$ C. $F(x) = 3x + 2$ D. $F(x) = x^2 + x$
1632	If S_r denotes the sum of the first r terms of a G.P., then $S_n, S_{2n} - S_n, S_{3n} - S_{2n}$ are in	A. A.P. B. G.P. C. H.P. D. None of these
1633	A function f from A to B can be written as	
1634	E-radius corresponding to $\angle A$ is	
1635	The symbol _____ shall be used both for equation and identity	A. $\lt br \gt$
1636	The sets {1, 2, 4} and {4, 6, 8, 10} are	A. Equal sets B. Equivalent sets C. Disjoint sets D. Overlapping sets
1637	Trivial solution of homogeneous linear equation is	A. (0, 0, 0) B. (1, 2, 3) C. (1, 3, 5) D. a, b and c
1638	The nth term of an A.P., is $12 - 4n$. Its common difference is	A. 8 B. 4 C. 4 D. 16
1639	if the value of the sphere, $v = \frac{4}{3}\pi r^3$, then the which of the following statement is true?	A. r is the function of v B. v is the function of r C. π is independent variable D. None of these
1640	The matrix $A = [a_{ij}]_{m \times n}$ with $m \neq n$ is always	A. Symmetric B. Hermitian C. Skew-symmetric D. None
1641		A. 0 B. 1
1642	On simplifying the equation $1 + \cos x / 1 + \sec x$ the result is.	A. $\sin x$ B. $\operatorname{cosec} x$ C. $\cos x$ D. $\sec x$
1643	If $f(x) = x^{100}$ the value of $f'(1)$ is:	A. 100 B. -100 C. 0 D. -101
1644		B. $a f(x) + c$ C. $f(x) + a$

1645	The greatest term in the expansion of $(3+2x)^9$, when $x=1$ is	A. 4th B. 4th and 5th C. 5th D. 6th
1646	In a quadratic equation with leading co-efficient 1, a student reads the co-obtain the roots as -15 and -4. The correct roots are	A. 6, 10 B. -6, -10 C. 8, 8 D. -8, -8
1647	Question Image	
1648	If α, β are the roots of the equation $x^2 + kx + 12 = 0$ such that $\alpha - \beta = 1$, the value of k is	A. 0 B. ± 1 C. ± 5 D. ± 7
1649	The total number of subsets that can be formed out of the set $\{a, b, c\}$ is	A. 1 B. 4 C. 8 D. 12
1650	Question Image	
1651	$(0,0)$ is in the solution of the inequality	A. $x + y \geq 3$ B. $x - y \geq 2$ C. $3x + 2y \geq 5$ D. $3x - 2y \leq 2$
1652	Question Image	
1653	The sum of the cubes of three consecutive natural number is divisible by	A. 9 B. 6 C. 5 D. 10
1654	Rank of matrix $\begin{bmatrix} 1 & 3 & 5 & 0 \end{bmatrix}$ is	A. 1 B. 3 C. 2 D. 4
1655	Question Image	
1656	Question Image	
1657	Let the real valued function F and G be defined by $f(x) = 2x + 1$ and $g(x) = x^2 - x$. The expression $fg(x)$ is given by?	A. $2x^2 - x + 1$ B. $2x^2 - 2x + 1$ C. $2x^2 - x + 2$ D. $x^2 - x + 1$
1658	No term of a geometric sequence can be	A. 0 B. 1 C. 2 D. 3
1659	If n is a positive integer then $n!$ is	A. $(n-1)(n-2) \dots 3, 2, 1$ B. $n(n-1)(n-2) \dots 3, 2, 1$ C. $n(n-1)(n-2) \dots 3$ D. None of these
1660	The complement of set A relative to universal set U is the set	A. $\{x / x \in A \wedge x \in U\}$ B. $\{x / x \notin A \wedge x \in U\}$ C. $\{x / x \in A \text{ and } x \notin U\}$ D. $A - U$
1661	If all members of a sequence are real numbers then it is called a	A. Series B. Function C. Real sequence D. Range
1662	A square matrix $A = [a_{ij}]$ is lower triangular matrix when:	A. $a_{ij} = 0$ for all $i \leq j$ B. $b_{ij} = 0$ C. $c_{ij} = 0$ D. $d_{ij} = 0$
1663	e is a	A. variable B. Positive constant C. Positive variable D. Directrix
1664	Question Image	D. none of these
1665	In $\mathbb{R}$, the multiplicative inverse of a is	A. 0 B. 1 C. $-a$ D. $1/a$

1666	Find the sum of the infinite geometric series $2 + 1 + 0.5 + \dots$	A. 3.5 B. 3 C. 4 D. None of these
1667	The set $\{ \{a,b\} \}$ is	A. Infinite set B. Singleton set C. Two points set D. Empty set
1668	In $\mathbb{R}$, the additive identity is	A. 0 B. 1 C. -1 D. None
1669	The value of p for which both the roots of the equation $4x^2 - 20x + (25p^2 + 15p - 66) = 0$ are less than 2, lies in	
1670	2.333....is a	A. Irrational no B. Complex no C. Rational no D. None of these
1671		A. An upper triangular matrix B. A lower triangular matrix C. A diagonal matrix D. A null matrix
1672	If $A = [a_{ij}]$ is $(m \times n)$ matrix, then transpose of A is of the order	A. $m \times m$ B. $m \times n$ C. $n \times n$ D. $n \times m$
1673		
1674		A. 3, -3, 11 B. 3, 3, 11 C. -3, 3, -11 D. -3, -3, 11
1675	$\csc(-\pi/2) = \underline{\hspace{2cm}}$;	A. 0 B. 1 C. -1 D. Undefined
1676	Apollonius was a:	A. Rocket B. Muslims scientist C. Greek mathematicians D. Method of finding conics
1677		
1678		
1679	$y=0$ of the parabola $y^2 = 4ax$ is the	A. equation of directrix B. Equation of the tangent C. Equation of axis D. equation of latus rectum
1680	The sum of coefficients in the binomial expansion equals to	A. 2 B. 2^{n+1} C. 2^{n-1} D. 2^n
1681	The angle between lines $xy = 0$ is	A. 45° B. 60° C. 90° D. 180°
1682		A. $(a - c)^2 = b^2 - c^2$ B. $(a - c)^2 = b^2 + c^2$ C. $(a + c)^2 = b^2 - c^2$ D. $(a + c)^2 = b^2 + c^2$
1683		
1684	$\int f(x)g(x) - \int g(x)f'(x) dx$ is equal to	A. $\int f(x)g'(x)dx$ B. $\int f'(x)g(x)dx$ C. $\int f'(x)g'(x)dx$ D. $\int f(x)g(x)dx$
1685		A. 360° B. 180° C. 90° D. None of these

1686	Associative law of multiplication	A. $ab = ba$ B. $a(bc) = (ab)c$ C. $a(b+c) = ab + ac$ D. $(a+b)c = ac + bc$
1687	$(x^3 - 1/x)^{12}$	A. 295 B. 495 C. 395 D. 722
1688	Question Image	A. 28 / 81 B. 28 / 243 C. 81 / 28 D. 243 / 82
1689	Question Image	A. π B. $\pi / 2$ C. $\pi / 3$ D. $\pi / 4$
1690	A sequence whose reciprocal is an A.P is called	A. Oscillator B. H.P C. G.P D. None of these
1691	Question Image	
1692	The set of all positive even integers is	A. Not a group B. A group w.r.t subtraction C. A group w.r.t division D. A group w.r.t multiplication
1693	If $Z = (1, 2)$, then $Z^{-1} = ?$	A. (0.2, 0.4) B. (-0.2, 0.4) C. (0.2, -0.4) D. (-0.2, -0.4)
1694	Question Image	
1695	3, 6, 12, is	A. A.P B. G.P. C. H.P. D. None of these
1696	Question Image	A. 0 B. 90° C. 180° D. 360°
1697	A cone is generated by all lines through a fixed point and the circumference of	A. a Circle B. an ellipse C. a Hyperbola D. None of these
1698	Question Image	
1699	If $x^2 - 7x + a$ has remainder 1 when divided by $x + 1$, then $a =$ _____	A. -7 B. 7 C. 0 D. None of these
1700	$w^{28} + w^{38} =$ _____	A. 0 B. 1 C. w D. -1
1701	The area enclosed between the graph $y = x^2 - 4x$ and the x- axis is:	A. 20/3 B. 41/3 C. 32/3 D. 25/3
1702	The distance from the point P(3,4) to the line $y = 2x - 3$ is:	A. $\sqrt{5}$ B. $\sqrt{3}$ C. $2\sqrt{3}$ D. $1/\sqrt{5}$
1703	The sum of an indicated number of terms in a sequence is called	A. sequence B. progression C. Series D. Mean
1704	The real number system contains.	A. Positive Numbers B. Negative numbers C. Zero D. (option a, b and c)
1705	Question Image	A. -x B. Infinite set C. $\{-4, 4\}$

		D. None of these
1706	i is equal	A. (1, 0) B. (0, 1) C. (1, 1) D. (0, 0)
1707	A function of the form $p(x)/Q(x)$ is called:	A. Rational function B. Logarithmic function C. Exponential function D. Hyperbolic function
1708	The middle term(s) of $(a+x)^{11}$ is	A. 6th term B. 6th or 7th C. 7th term D. 6th and 7th
1709	If A and B are two matrices such that $AB = B$ and $BA = A$, then $A^2 + B^2 =$	A. 2 AB B. 2 BA C. A + B D. AB
1710	The length of the tangent from (2, 1) to the circle $x^2 + y^2 + 4y + 3 = 0$ is	
1711	An equation of the form $ax + by = k$ is homogeneous linear equation when:	
1712	Period of Cotangent function is	A. π B. $-\pi$ C. 0 D. -2π
1713		A. 0 B. 1 C. 2 D. 4
1714	Which symbolic notation represent unary operation ?	A. - B. $\vee$ C. $\wedge$ D. $\leftrightarrow$
1715	$\{0\}$ is a	A. Empty set B. Singleton set C. Zero set D. Null Set
1716	The total cost of 2 apples and 3 oranges is \$1.70, which of the following is true	A. The cost of one apple B. The cost of one orange C. Both have equal cost per item D. Cost of each single item can not be determined
1717		
1718	If $a_n = 2n - 3$, write the first four terms	A. -3, -1, 1, 3 B. 1, 3, 5, 7 C. -1, 1, 3, 5 D. None of these
1719	A semi-group having an identity is called a	A. groupoid B. non-commutative C. abelian D. monoid
1720		D. none of these
1721	In order of A is $m \times n$ and order of B is $n \times p$ then order of AB is	A. $m \times m$ B. $n \times n$ C. $m \times p$ D. $p \times m$
1722	A triangle which is not right is called an _____ triangle	A. Acute B. Obtuse C. Oblique D. None of these
1723	For every positive integers n $1+5+9+\dots+(4n-3)$ is	A. $n(2n-1)$ B. $(2n-1)$ C. $n-1$ D. n
1724		
1725	In $(x+iy)$ y is called as	A. Imaginary part B. Complex number C. Real part D. None of these

D. none of above

1726	If the roots of $3x^2+kx+12=0$ are equal then k = _____	
1727	A number A is said to be the A.M between the two numbers a and b if a, A, b are in	A. A.M B. A.P C. G.P D. G.M
1728	The number of different ways of describing a set is	A. One B. Two C. Three D. Four
1729	1 degree = _____	A. 0.00175 rad B. 0.175 rad C. 0.0175 rad D. 1.75 rad
1730	Question Image	
1731	If $f(a) = b^2$ and $g(c) = d$ where $c = b^2$ then $(g \circ f)(a)$ is	A. α B. c C. b D. d
1732	Roots of the equation $x^2 + 5x - 1 = 0$ are	A. Rational B. Irrational C. Complex D. None of these
1733	The point (x_1, y_1) lies outside the circle $x^2 + y^2 + 2gx + 2fy + c = 0$ if	
1734	Question Image	A. quadrant I B. quadrant II C. quadrant III D. quadrant IV
1735	Question Image	A. Does not exist because f is unbounded B. Is not attained even though f is bounded C. Is equal to 1 D. Is equal to -1
1736	The circle with are 60 cm^2 has an arc 8 cm long. The angle that is subtended at the centre of the circle by the are is	A. 1.83 radians B. 2.1 radians C. 1.05 radians D. 1.25 radians
1737	If n is any positive integer then $2^n > 2(n+1)$ is true for all	
1738	Question Image	A. $3/4$ B. $-3/4$ C. $4/3$ D. $-4/3$
1739	$i =$	A. $\sqrt{1}$ B. $\sqrt{2}$ C. $\sqrt{-2}$ D. $\sqrt{-1}$
1740	Period of $\tan x$ is _____	
1741	Question Image	
1742	Question Image	
1743	If $f(x) = x $, then (0,0) is the	A. Critical point B. Inflection point C. Stationary point D. None of these
1744	The point which divides the line joining the points (2, 4, 5) and (3, 5, -4) in the ratio -2 : 3 lines on	A. ZOZ plane B. XOY plane C. YOZ plane D. None of these
1745	Question Image	
1746	the curve of the parabola $y^2 = -4ax$ is symmetric with respect to	A. x - axis B. y - axis C. Both x and y- axis D. None of thes

A. $b = 0, c = 0$

1747	If $ax + bx + c = 0$ is satisfied by every value of x , then	A. $c = 0$ B. $b = 0$ D. $a = b = c = 0$
1748		A. $\cot x + c$ B. $\tan x + c$ C. $-\cot x + c$ D. $-\tan x + c$
1749	Write the first four terms of the sequence if $a_n = (-1)^n n^2$	A. -1, 4, -9, 16 B. 1, -4, 9, 16 C. 1, 4, 9, 16 D. None of these
1750	The points (5, 0, 2), (2, -6, 0), (4, -9, 6) and (7, -3, 8) are vertices of a	A. Square B. Rhombus C. Rectangle D. Parallelogram
1751	A committee consists of 9 experts taken from three institutions A, B, and C, of which 2 are from A, 3 from B and 4 from C. If three experts resign, then the probability that they belong to different institutions is	A. $1/729$ B. $1/24$ C. $1/21$ D. $2/7$
1752	If $B = \{x/x \in \mathbb{Z} \wedge -3 < x < 6\}$, then $n(B) =$	A. 5 B. $\{-3, -2, -1, 0, 1, 2, 3, 4, 5, 6\}$ C. 8 D. 9
1753	The equation of a line parallel to the tangent to the circle $x^2 + y^2 = 16$ at the point (2, 3) and passing thro' the origin is	A. $2x + 3y = 0$ B. $2x - 3y = 0$ C. $3x + 2y = 0$ D. $3x - 2y = 0$
1754		
1755	If $ a = b = a + b = 1$, then $ a + b = 5$, then $ a - b =$	A. 4 B. 6 C. 5 D. 3
1756	If A is a matrix of order $m \times l$, then matrix A is called	A. singular matrix B. Column matrix C. Row matrix D. Identity matrix
1757		
1758		
1759	$\cos^{-1}(x) =$	A. $\cos x$ B. x C. $\tan^{-1}(-x)$ D. $\sec^{-1}(1/x)$
1760	The transpose of a row matrix is a _____	A. Zero matrix B. Diagonal matrix C. Column matrix D. Row matrix
1761	The extraction of a cube root of a given number is a	A. Binary operation B. Unary operation C. group D. multiplicative inverse
1762	What is the period of $\tan \frac{4}{3} x = ?$	A. $\pi/4$ B. $4\pi/3$ C. $7\pi/4$ D. $3\pi/4$
1763	If no two elements of ordered pair of a functions from A into B are equal, then it is called.	A. Surjective B. Injective C. Bijective D. Onto
1764		
1765		
1766	At a point 15 meters away from the base of a 15 meters high house, the angle of elevation of the top is	A. 90° B. 60° C. 30° D. 45°
1767	A function f is said to be an even if $f(-x) =$	A. 0

1767	A function is said to be an even function if	B. 1 C. $f(x)$ D. $-f(x)$
1768	The solution set of $x < 4$ is	A. $-\infty < x < 4$ B. $-\infty < x < 4$ C. $-\infty < x < 4$ D. $-\infty < x < 4$
1769	In the expansion of $(x+y)^n$ the coefficient of 5th and 12th terms are equal then n=	A. 12 B. n=14 C. 17 D. n=15
1770	1st four terms of the expansion $(1-x)^{-2}$ are	A. $1 + 2x + 3x^2 + 4x^3$ B. $3x^2 + 2x + 1$ C. $1 + 3x + 4x^2 + 5x^3$ D. None of these
1771	The area of sector with central angle of 1 radian in a circular region whose radius is 2m is	A. 0.5m ² B. 2m ² C. 1m ² D. 4m ²
1772	The maximum value of the quadratic function $f(x) = 2x^2 - 4x + 7$, is	A. 3 B. 5 C. -3 D. -5
1773	The set $\{1, -1, i, -i\}$	A. Form a group w.r.t addition B. Form a group w.r.t multiplication C. Does not form a group w.r.t multiplication D. Not closed under multiplication
1774	Question Image	
1775	Question Image	A. One-to-one and onto B. One-to-one but not onto C. Onto but not one-to-one D. Neither one-to-one nor onto
1776	Given X, Y are any two sets such that number of elements in X = 18, number of elements in set Y = 24, and number of elements in set $X \cup Y$ = 40, then number of elements in set $X \cap Y$ =	A. 3 B. 1 C. 2 D. 4
1777	The solution of the equation $\cos^2 \theta + \sin \theta + 1 = 0$ lies in the interval	
1778	Question Image	
1779	Question Image	
1780	Question Image	A. 0.9 B. 0.74 C. 0.2016 D. None of these
1781	$f(x) = \log x + 3$ is a	A. trigonometric function B. algebraic function C. exponential function D. logarithmic function
1782	Question Image	
1783	Question Image	A. $y + 1 = Ae^{x^2}$ B. $y + 1 = Axe^{x^2}$ C. $xe^{x^2} = C$ D. $y + xe^{x^2} = C$
1784	The sum of n terms of a series is denoted by	A. d B. n C. S_n D. a_n
1785	Question Image	
1786	$(1+w)(1+w^2)(1+w^4)(1+w^8) \dots 50$ factors	A. 0 B. -1 C. 1

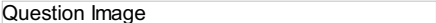
D. 2

1787	The area between the x-axis the curve $y = 4x - x^2$ is :	A. 32/2 B. 15 C. 18 D. 21
1788	A kite flying at a height of 67.2 m is attached to a fully stretched string inclined at an angle of 53 to the horizontal, the length of the string	A. 62m B. 82m C. 73m D. 57m
1789	Question Image	
1790	The equation of motion of a stone thrown vertically up wards is $s = ut - 4.9t^2$ the maximum height attained by it =	
1791	Question Image	D. None of these
1792	The set of complex numbers forms a group under the binary operation of	A. Addition B. none of these C. Division D. Subtraction
1793	Question Image	A. Closure law of addition B. Associative law of addition C. Additive inverse D. Additive identity
1794	i =	
1795	Question Image	B. 0 C. 1 D. undefined
1796	For all points (x,y) in fourth quadrant	A. $x \geq 0, y \leq 0$ B. $x \geq 0, y \geq 0$ C. $x \leq 0, y \leq 0$ D. $x \leq 0, y \geq 0$
1797	Question Image	
1798	Question Image	
1799	If three unequal numbers p, q, r are in H.P. and their squares are in A.P., then the ration p : q : r is	
1800	A cone is generated by all lines through a fixed point and the circumference of	A. a circle B. an ellipse C. a hyperbola D. none of these
1801	The coefficient of x^n in the expansion of $(1-2x)^{-1}$ is	A. $(-1)^{n+1}$ B. 2^n C. $(-1)^{n+1} \times n$ D. $(n+1)2^n$
1802	Question Image	A. 1 B. 0 C. -2 D. 3
1803	Question Image	A. $b = c$ B. $a = c$ C. $a = b$ D. $b = 0$
1804	Question Image	A. 0 B. 1 D. -1
1805	Question Image	D. all are correct
1806	$(a,0) \times (c,0) =$	A. (0,ac) B. (ac,0) C. (0,0) D. (a,c)
1807	Composition of functions is	A. Non-commutative ($fg \neq gf$) B. non-associative [$8(fh) \neq (8f)h$] C. Commutative ($fg = gf$) D. $f \circ f^{-1} \neq 1$
1808	Domain of $\cos x$ is _____	

A. Implicit equation

1809	An equation containing at least one derivative of a depends variable with respect to independent variable is a (an)	A. implicit equation B. Differential equation C. General equation D. None of these
1810	The general solution of the differential equation $x \, dy / dx = 1 + y$ is:	A. 2 B. 1 C. 3 D. None
1811	$i^0 =$ _____	A. 1.5 rad B. 0.5 rad C. 0.175 rad D. None of these
1812	Question Image	
1813	Rational number is a number which can be written as a terminating decimal fraction or a	A. Non-terminating decimal fraction B. Non-recurring C. Recurring decimal fraction D. a, b and c
1814	Question Image	
1815	The distance of the point (-2 , -3) from x-axis is	A. 2 B. -3 C. 3 D. 5
1816	If line through (4,3) and (2,k) is perpendicular to $y = 2x + 3$, then $k =$ _____	A. -1 B. 1 C. -4 D. 4
1817	The roots of the equations will be equal if $b^2 - 4ac$ is	A. Positive B. Negative C. 1 D. Zero
1818	Two circle $s_1: x^2 + y^2 + 2x - 2y - 7 = 0$; $s_2: x^2 + y^2 - 6x + 4y + 9 = 0$	A. Touch externally B. Touch internally C. Intersects each other D. Do not intersects
1819	$i^2 =$	A. 1 B. 2 C. -1 D. 0
1820	Under multiplication, solution set of is	A. Groupoid B. Abelian group C. Semi group D. All of these
1821	Question Image	
1822	The sum of all positive integral multiple of 5 less than 100 is	A. 950 B. 760 C. 1230 D. 875
1823	Question Image	
1824	If n is any positive integer then $4^n > 3^n + 4$ is true for all	
1825	How many arrangements of the letters of the word ADDING can be made	
1826	Question Image	A. $n!$ B. $0!$ C. 1 D. None of these
1827	$\sin 540^\circ =$	A. 0 B. 1 C. 2 D. 3
1828	If the lower limit of an integral is a constant and the upper limit is a variable, then the integral is a	A. Constant function B. Variable value C. Function of upper limit D. All
1829	The constant distance of all points of the circle from its centre is called the	A. radius of the circle B. secant of the circle C. chord of the circle D. diameter of the circle

1830		A. $6x - 2 + c$ B. $x^3 - x^2 + x + c$ C. $6x - x^2 + c$ D. $6x^3 - x^2 + c$
1831	Which of the following integrals can be evaluated	
1832		
1833		A. 2 B. 4 C. 8 D. 16
1834	$2\pi + \theta$ will have terminal side in Quad	A. I B. II C. III D. IV
1835	A relation a into B in which Domain is not equal to a , is called.	A. Into function B. on to function C. None of these D. Surjective
1836	$(x + 2)^2 = x^2 + 4x + 4$ is	A. A linear equation B. A cubic equation C. A quadratic equation D. None
1837		
1838	The points of intersection of the line $y = 2x - 3$ and the circle $x^2 + y^2 - 3x - 2y - 3 = 0$ are:	A. two B. three C. less than two D. not intersect
1839	$f(x) = x^3 - x/x^2 + 1$ is :	A. an even function B. an odd function C. an even and implicit function D. neither even nor a odd
1840		
1841	If in a set of real no a is additive identity then	A. $a + a = 2a$ B. $a + a = 1$ C. $a + a = 0$ D. None of these
1842		
1843		A. 2×2 B. 2×3 C. 3×2 D. 3×3
1844		
1845	Deductive logic in which every statement is regarded as true or false and there is no other possibility is called	A. deductive logic B. inductive logic C. Aristolian logic D. non-Aristolian logic
1846		A. $f(x) = x^2$ B. $f(x^2) = x$ C. $f(x) = x$ D. none of these
1847	The probability to get an odd number in a dice thrown once is	A. 6 B. 1 C. $1/6$ D. $1/2$
1848		
1849	If $x^2 + px + 1$ is a factor of $ax^3 + bx + c$, then	A. $a^2 + c^2 = -ab$ B. $a^2 - c^2 = -ab$ C. $a^2 - c^2 = ab$ D. None of these
1850		
1851	If order of A is $m \times n$, then order of A^t is	A. $m \times m$ B. $n \times n$ C. $m \times n$ D. $n \times m$

1852	Both the roots of the equation $(x - b)(x - c) + (x - c)(x - a) + (x - a)(x - b) = 0$ are always	A. Positive B. Negative C. Real D. None of these
1853	In $\mathbb{R}$, the additive inverse of a is	A. 0 B. 1 C. $-a$ D. $1/a$
1854		A. (x, y) B. (kx, y) C. (x, ky) D. (kx, ky)
1855	A relation in which the equality is true for all values of the unknown is called _____	A. An identity B. An equation C. A polynomial D. None of these
1856		A. 8th B. 10th C. 7th D. 3rd
1857	$d/dx(x^3 + 2x + 3) =$	A. $x^2 + 2$ B. $3x + 2$ C. $3x^2 + 5$ D. $3x^2 + 2$
1858	In how many ways can 5 persons be seated at a round table	A. 5! B. 4! C. 3! D. 120
1859	The graph of $y < 2$ is the	A. Left half plane B. upper half plane C. Right half plane D. Lower half plane
1860		A. Proper fraction B. Improper fraction C. Rational fraction D. None of these
1861	If the focus lies on the y -axis with coordinates $f(0, a)$ and directrix of the parabola is $y = -a$, the equation of parabola is:	A. $y^2 = -4ax$ B. $x^2 = 4ay$ C. $x^2 = -4ay$ D. $y^2 = 4ax$
1862	If $2x + y + \lambda = 0$ is normal to parabola $y^2 = -8x$, $\lambda =$ _____	A. 12 B. 8 C. 24 D. -24
1863		
1864		A. 3 B. 6 C. 0 D. None of these
1865	If $A(x_1, y_1)$, $B(x_2, y_2)$ and $C(x_3, y_3)$ are the vertices of a triangle then its centroid is	
1866	The sample space for tossing a coin once is	A. $\{T, T\}$ B. $\{H, H\}$ C. $\{H, T\}$ D. None of these
1867	If $x^3 + 4x^2 - 2x + 5$ is divided by $x - 1$, then the remainder is	A. 8 B. 6 C. 4 D. None of these
1868	The solution set of trigonometric equation contains	A. one element B. two elements C. three elements D. Infinite elements
1869		D. none of these
1870	A function whose range is just one elements is called	A. One-one function B. Constant function C. Onto function D. Identity function

1871	For all points (x,y) in third quadrant	A. $x \geq 0, y \leq 0$ B. $x \geq 0, y \geq 0$ C. $x \leq 0, y \leq 0$ D. $x \leq 0, y \geq 0$
1872	If $B-A \neq \emptyset$, then $n(B-A)$ is equal to	A. $n(a)+n(c)$ B. $n(c)-n(a)$ C. $n(a)-n(c)$ D. None of these
1873	$x = \sec\theta, y = \tan\theta$ are the parametric equations of	A. Circle B. Hyperbola C. Ellipse D. parabola
1874	If $y = 2x$, then	A. $y^1 - \ln 2y = 0$ B. $y^2 - (\ln 2)^2 y = 0$ C. $y^2 - (\ln 2)y^1 = 0$ D. All are correct
1875	The approximate percentage increase in the volume of a cube if the length of its each edge changes from 5 to 5.02 is	A. 1.2% B. 1.5% C. 0.16% D. 100.16%
1876		
1877		
1878	$7^{2n} + 3^{n-1} \cdot 2^{3n-3}$ is divisible by	A. 24 B. 25 C. 9 D. 13
1879		
1880	A disjunction of two statement p and q is true	A. p is false B. q is false C. Both p and q are false D. One of p and q is true
1881		
1882	Disjunction of p and q is	A. p or q B. p and q C. p if q D. p implies q
1883		
1884	A function from A to B is denoted by	A. $f: A \rightarrow B$ B. $f: B \rightarrow A$ C. $f: \rightarrow A : B$ D. $f \rightarrow A \rightarrow B$
1885	$P \notin A$ means	A. $\langle i \rangle P \langle /i \rangle$ is subset of A B. $\langle i \rangle P \langle /i \rangle$ is an element of A C. $\langle i \rangle P$ does not belongs to A D. A does not element of $\langle i \rangle P \langle /i \rangle$
1886		A. -1 B. 0 C. 2 D. 1
1887	$\operatorname{Cosec} 60^\circ = \underline{\hspace{2cm}}$	
1888	$\cos 60^\circ = \underline{\hspace{2cm}}$	A. 1 B. 2 C. $1/2$ D. 3
1889	$\sin 5\theta + \sin 3\theta = \underline{\hspace{2cm}};$	A. $2\sin 4\theta \cos \theta$ B. $2\cos 4\theta \sin \theta$ C. $2\cos 4\theta \cos \theta$ D. $-2\sin 4\theta \sin \theta$
1890	A card is drawn from a pack of cards numbered 1 to 52, the probability that the number on the card is a perfect square is	A. $1/13$ B. $2/13$ C. $7/52$ D. None of these
1891	A card is drawn from a pack of cards numbered 2 to 53. the probability that the number on the card is prime number less than 20 is	A. $2 / 13$ B. $4 / 13$ C. $5 / 13$ D. $8 / 13$

1892	Question Image	
1893	The point (1,3) is one solution of	A. $3x + 5y \geq 29$ B. $3x + 5y \leq 7$ C. $x + 2y \leq 4$ D. $x + 4y \geq 3$
1894	The number of terms in the expansion of $(a + x)^{12}$ is	A. 13 B. 12 C. 11 D. 10
1895	Question Image	
1896	Question Image	A. 360° B. 180° C. 90° D. None of these
1897	Question Image	
1898	The equation of the circle whose centre is (-3, 5) and having radius 7 is	A. $(x-3)^2 + (y+5)^2 = 7^2$ B. $(x-3)^2 + (y+5)^2 = 7$ C. $(x-3)^2 + (y-5)^2 = 7^2$ D. $x^2 + y^2 + 6x - 10y - 15 = 0$
1899	Range of $y = \sec x$ is	A. $-1 \leq y \leq 1$ B. $y \geq 1$ or $y \leq -1$ C. $y \leq 1$ or $y \geq -1$ D. $-\infty < y < +\infty$
1900	The horizontal distance between the two towers is 60 m. the angular elevation of the top of the taller tower as seen from the top of the shorter one is 30° . If the height of the taller tower is 150 m, the height of the shorter one is	A. 116 m B. 200 m C. 216 m D. None of these
1901	The square root of every incomplete square is an	A. Rational numbers B. Even numbers C. odd numbers D. Irrational numbers
1902	The tangents drawn from the point P to a circle are real and distinct if	A. P is on the circle B. P is inside the circle C. P is outside the circle D. none of these
1903	The numbers of $G_1, G_2, G_3, \dots, G_n$ are called n geometric means between a and b is a, $G_1, G_2, G_3, \dots, G_n, b$ are in	A. H.P. B. A.P. C. G.P. D. None of these
1904	Question Image	D. none of these
1905	The set of rational numbers is subset of	A. The set of natural numbers B. The set of real numbers C. The set of integers D. The set of whole numbers
1906	The set of complex numbers forms	A. Commutative group w.r.t addition B. Commutative group w.r.t multiplication C. Commutative group w.r.t division D. Non commutative group w.r.t addition
1907	$\tan(\pi - \theta) = \underline{\hspace{1cm}}$;	A. $\tan \theta$ B. $\cot \theta$ C. $-\tan \theta$ D. $-\cot \theta$
1908	While writing his books on geometry, Euclid used	A. Inductive method B. Deductive method C. Implication D. proposition
1909	The set of positive integers, 0 and negative integers is known as the set of	A. Natural numbers B. Rational numbers C. All integers D. Irrational numbers
1910	The set which has no proper subset is	A. $\{0\}$ B. $\{\}$ C. $\{\emptyset\}$ D. None of these
1911	The set $\{0, -1\}$ hold closure property under	A. Addition B. Both a & c C. Multiplication D. None of these

		D. None of these
1912	The familiar plane curves, namely circle, ellipse, parabola and hyperbola are called:	A. cones B. conics C. nappes D. apex
1913	Question Image	A. 100 B. 99 C. 0 D. none of these
1914	Matrices $A = [a_{ij}]$ 2×3 and $B = [b_{ij}]$ 3×2 are suitable for	A. BA B. A2 C. AB D. B2
1915	The positive real number which is the measure of the length of a vector is called the	A. Unit vector B. Modulus C. Inverse D. None of these
1916	If in a square matrix a, two rows or two columns are interchanged the determinant of the resulting matrix is	A. $ A $ B. $ 1/ A $ C. A^{-1} D. $- A $
1917	$\sin(180^\circ - \theta) =$	A. $\cos \theta$ B. $-\cos \theta$ C. $\tan \theta$ D. $\sin \theta$
1918	The extraction of cube root of a given number is a	A. Unary Operation B. Binary Operation C. Relation D. None of these
1919	If $x = 1/x$ for $x \in \mathbb{R}$ then the value of x is	A. ± 1 B. 0 C. 2 D. 4
1920	The third term of the sequence $a_n = (-1)^{n-1}(n-7)$ is _____	A. 8 B. 4 C. -4 D. 8
1921	Question Image	
1922	The parabola $y^2 + 2y + x = 0$ lie in _____ quadrant.	A. First B. Second C. Third D. Fourth
1923	If $f(x) = -x^3$ then $f(-2)$ is	A. -2 B. -4 C. -8 D. 8
1924	If A is singular then $ A =$ _____	A. 1 B. 0 C. 2 D. None of these
1925	The law of cosines reduces to $a^2 + c^2 = b^2$ for	A. $\alpha = 90^\circ$ B. $\beta = 90^\circ$ C. $\gamma = 90^\circ$ D. $\alpha + \beta + \gamma = 180^\circ$
1926	Question Image	
1927	The number of permutations of n objects of which there are n_1 like of one kind, n_2 like of the second kind and n_3 like objects of third kind are	
1928	Question Image	A. 2^x B. $2^x \ln x$ C. $2^x \ln 2$
		A. $+(5 - 2i)$ B. $+(5 + 2i)$

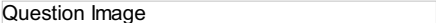
1929	The square root of $2i - 20i$ is	A. $\sqrt{2} - 20\sqrt{2}i$ C. $(5 - 2i)$ D. None of these
1930	$w^{-1} = \underline{\hspace{2cm}}$	A. 0 B. 1 C. w D. $w^{\sup{2}}$
1931	If (0, 0) and (0, -1) are end points of a diameter, then the equation of the circle is	
1932	The degree of differential equation is the power of the	A. Lowest order derivative B. Highest order derivative C. Integral D. All are correct
1933	Question Image	A. 100 B. -100 C. 0 D. -101
1934	Express the perimeter P of square as a function of its area A?	A. $P = 4\sqrt{A}$ B. $P = \sqrt{A}$ C. $P = 2A$ D. $P = \pi\sqrt{A}$
1935	The multiplicative inverse of $-3i$ is	A. $3i$ B. $-3i$ C. $-1/3i$ D. $1/3 i$
1936	Question Image	
1937	Question Image	
1938	Which of the following integrals can be evaluated	
1939	Question Image	
1940	The unit vector along y-axis is	D. none of these
1941	The medians of a triangle are:	A. Collinear B. Concurrent C. Perpendicular D. zero
1942	Question Image	A. Always negative B. Zero C. Always positive D. Infinity
1943	Question Image	B. $x^{\sup{-2}} + c$ D. not possible
1944	Question Image	
1945	In R the number of identity elements w.r.t.'.' is	A. One B. Two C. Three D. Four
1946	Question Image	A. A is proper subset of B B. A is an improper subset of B C. A is equivalent to B D. B is subset of A
1947	The angles with some initial and terminal sides are called	A. Quadrantal angles B. Coterminal angles C. Allied angles D. None
1948	For what value of k, $3x - 2y + k = 0$ is tangent to the circle $x^2 + y^2 + 6x - 4y = 0$	A. $k=0$ B. $k=0$ or 26 C. $k = 26$ D. $k=-13$
1949	Question Image	
1950	Which of the following does not represent absolute value of a vector	A. magnitude B. length C. norm D. number
1951	$\cot(3\pi/2 - \theta) = \underline{\hspace{2cm}};$	A. $\tan\theta$ B. $\cot\theta$ C. $-\tan\theta$

		D. $-\cot\theta$
1952	The set $(\mathbb{Z}, +)$ forms a group	A. Forms a group w.r.t addition B. Non commutative group w.r.t multiplication C. Forms a group w.r.t multiplication D. Doesn't form a group
1953	Question Image	A. The law of sines B. The law of tangents C. The law of cosines D. None of these
1954	The sum of the squares of three distinct real numbers, which are in G.P., is S^2 . If their sum is αS then	
1955	Which of the following sets has closure property w.r.t. addition	A. $\{0\}$ B. $\{1\}$ C. $\{0, -1\}$ D. $\{1, -1\}$
1956	The distance between two points $P(x_1, y_1)$ and $Q(x_2, y_2)$ is	
1957	Question Image	A. -1 B. 0 C. 1 D. undefined
1958	The domain of the function $x/\sqrt{x^2 - 4}$ is given by	A. $\mathbb{R}$ B. $\mathbb{R} + 2$ C. $[\mathbb{R} - (\sqrt{2}, \sqrt{2})$ D. $\mathbb{R} - 4$
1959	If θ be angle between u, v and u, v determine the sides of a triangle then the third side opposite to angle θ has length	A. $ u+v $ B. $ u + v $ C. $ u-v $ D. $ u - v $
1960	If both p and q are false, then the disjunction of p and q is	A. false B. true C. equal D. equivalent
1961	Question Image	
1962	If the cutting plane is slightly tilted and cuts only one nappe of the cone, the intersection is	A. an ellipse B. a hyperbola C. a circle D. a parabola
1963	If for two events A and B , $P(A \cup B) = 1$, then events A and B are	A. Certain events B. Mutually exclusive C. Complementary events D. Independent
1964	Question Image	A. Commutative property of addition B. Closure property of addition C. Additive inverse D. Associative property w.r.t. to addition
1965	The vertex of the parabola $(x \sin a - y \cos a)^2 = 4a(x \cos a + y \sin a)$ lies at	A. $(\cos a, \sin a)$ B. $(a, 0)$ C. $(\cos a, \sin a)$ D. $(0, 0)$
1966	Question Image	A. $x^2 + 2$ B. $3x + 2$ C. $3x^2 + 5$ D. $3x^2 + 2$
1967	The value of 300° in term of π is	A. $5\pi/3$ B. $2\pi/3$ C. $5\pi/2$ D. 5π
1968	Question Image	A. $\cos x$ B. $-\sin x$ C. $-\cos x$ D. $\tan x$
1969	Question Image	A. $a \operatorname{cosec}(ax + b) + c$ B. $-a \operatorname{cosec}(ax + b) + c$
1970	Axes remain parallel to the old axes, in:	A. Translating of axes B. rotation of axes C. Translation and rotation of axes

		D. None of these
1971	Which of the following is a quadrantal angle	A. 30° B. 45° C. 60° D. 90°
1972	The period of $\sin x/2 = \cos x/3$ is	A. 2p B. 12p C. 13p D. 7p
1973	$\tan(\pi - \theta) = \underline{\hspace{2cm}}$	A. $-\sin\theta$ B. $-\tan\theta$ C. $-\cos\theta$ D. $-\cot\theta$
1974	0.25 is _____	A. An irrational number B. A natural number C. A prime number D. A rational number
1975	$\tan(3\pi/2 + \theta) = \underline{\hspace{2cm}};$	A. $\tan\theta$ B. $\cot\theta$ C. $-\tan\theta$ D. $-\cot\theta$
1976	Question Image	
1977	Let A,B, and C be any sets such that $A \cup B = A \cup C$ and $A \cap B = A \cap C$ then	A. $A \neq C$ B. $B = C$ C. $A = B$ D. $A \neq B$
1978	Area of $\triangle ABC =$	A. $ab \sin \alpha$ B. $\frac{1}{2} ab \sin \alpha$ C. $\frac{1}{2} ac \sin \alpha$ D. $\frac{1}{2} ac \sin \beta$
1979	If A is non-empty set, any subset of $A \times A$ is called a relation in	A. A B. B C. $\emptyset$ D. r
1980	Z is the set of integers ($\mathbb{Z}$) is a group with $a * b = a + b + 1$, $a, b \in \mathbb{Z}$. then inverse of a is	A. -a B. a +1 C. -1-a D. None of these
1981	The set $\{\{a,b\}\}$ is	A. Infinite set B. Singleton set C. Two points set D. None
1982	The vector $k = [0,0,1]$ is called unit vector along:	A. x -axis B. y - axis C. z - axis D. None of these
1983	Question Image	A. $2x \cos x$ B. $2 \sin x \cos x$ C. $-\sin x$ D. $2x \sin x$
1984	$a > b, b > c \Rightarrow a > c$ is a	A. Multiplicative property B. Additive property C. Trichotomy property D. Transitive property of inequality
1985	Question Image	A. A B. A' C. U D. A A'

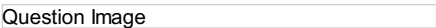
1986	Question Image	
1987	In quadratic equation $f(x) = ax^2$, if $a > 0$, then the graph of parabola	A. Opens up B. Opens down C. close up D. symmetric w.r.t.x.axis
1988	Question Image	
1989	Question Image	
1990	Such a function which is (1 -1) is called	A. surjective B. injective C. bijective D. into
1991	Question Image	A. 1 B. 0
1992	Question Image	A. A natural number B. A rational number C. An irrational number D. A whole number
1993	The process of finding a function whose derivative is given is called a	A. Differentiation B. Integration C. Differential D. None
1994	The value of $\sin^{-1} \frac{24}{25}$ is equal to	A. $\csc^{-1} \frac{25}{24}$ B. $\sec^{-1} \frac{24}{25}$ C. $2 \tan^{-1} \frac{4}{5}$ D. $2\cos^{-1} \frac{24}{25}$
1995	Question Image	A. 5 B. 15 C. 10 D. 20
1996	Question Image	
1997	The conjugate of $\sqrt{5} i$ is	A. $\sqrt{5}$ B. $-\sqrt{5} i$ C. i D. $5i$
1998	The equation of the circle with centre (5, -2) and radius 4 is	A. $(x-5)^2 + (y+2)^2 = 16$ B. $(x-5)^2 + (y+2)^2 = 4$ C. $(x-5)^2 + (y-2)^2 = 16$ D. $(x-5)^2 + (y-2)^2 = 4$
1999	A class contains nine boys and three girls, in how many ways can the teacher choose a committee of four?	A. 60 B. 460 C. 495 D. 272
2000	if $A = \{x/x \in \mathbb{Q} \wedge 0 < x < 1\}$, the A is	A. Infinite set B. Finite set C. Set of rational numbers D. Set of real numbers
2001	A non-homogeneous linear system $AX = B$ has no solution if	A. $A = 0$ B. $ A \neq 0$ C. Rank (a) = no of variables D. Rank $>$ no of variables
2002	The exponent of x in 10th term in the expansion of $(a+x)^n$	A. 10 B. 12 C. 11 D. 9
2003	Question Image	A. Rational B. Irrational C. Even D. Odd
2004	$\sin(a + \beta) + \sin(a - \beta) = \underline{\hspace{1cm}}$;	A. $2\cos a \cos \beta$ B. $2\sin a \cos \beta$ C. $2\cos a \sin \beta$ D. $-2\sin a \sin \beta$
2005	Question Image	A. $A = x, B = 1$ B. $A = 0, B = 2$ C. $A = -1, B = 1$ D. $A = x-1, B = x+1$

2006		A. $\sin h x$ B. $\cos h x$ C. $\tan h x$ D. $\cot h x$
2007	If A and B are two matrices of order B X B then, AB = A iff	A. B=1 B. B=A C. $B=A^{(-2)}$ D. $B=B^{2 \times 2}$
2008	$x = r2, y = 1$ are the parametric equation of	A. Circle B. Hyperbola C. Ellipse D. Parabola
2009	The measure of the acute angle between the lines represented by $x^2 - xy - 6y^2 = 0$ is	A. 120° B. 30° C. 130° D. 45°
2010	π is the period of the function	A. $\sin x + \sin x$ B. $\sin^4 x + \cos x$ C. $\sin(\sin x) + \sin(\cos x)$ D. None of these
2011		B. $a^{x \ln a + c}$ C. $a^{x \ln a + c}$ D. $x a^{x \ln a + c}$
2012		
2013		
2014	The last term of $(1+2x)^{-2}$	A. $(-1)^{-2} (2x)^{-2}$ B. $(-1)^{-4} (-2x)^{-2}$ C. $(-1)^{-3} (2x)^{-3}$ D. Does not exist
2015		A. Associative law of addition B. Commutative law of addition C. Additive identity D. Closure law of addition
2016	The coefficient of x^{10} in the expansion $(x^3 + 3/x^2)^{10}$ is	A. 1700 B. 17023 C. 17027 D. 17010
2017		A. [0, 0, 0] B. [1, 0, 0] C. [0, 1, 0] D. [0, 0, 1]
2018		A. Lies between 4 and 7 B. Lies between 5 and 9 C. Has no value between 4 and 7 D. Has no value between 5 and 9
2019		
2020		
2021	The square of the distance between two points P(x_1, y_1) and Q(x_2, y_2) is	
2022		
2023	The number of subsets of $B = \{1, 2, 3, 4, 5\}$	A. 10 B. 32 C. 16 D. 5
2024		A. $x=0, y=4$ B. $x=-1, y=2$ C. $x=2, y=3$ D. $x=3, y=4$
2025	Given matrix A of order $m \times n$ then $A + (-A) =$	A. 0 B. A C. -A D. 2A
2026	The Principal value of $\sin^{-1}(-1/1/2)$	A. $\pi/2$ B. $-\pi/2$ C. π D. $-\pi$
2027	Which of the vectors have opposite direction?	

2028	The slope of the normal at (4,3) to the circle $x^2+y^2=25$ is	A. $\frac{3}{4}$ B. $-\frac{3}{4}$ C. $\frac{4}{3}$ D. $-\frac{4}{3}$
2029	2π is the period of	A. $\sin x$ B. $\tan x$ C. $\cot x$ D. all circular function
2030		A. Identity matrix B. Diagonal matrix C. Null matrix D. Hermitian matrix
2031		A. 6 B. 360 C. 120 D. 24
2032	If $3x + 4y + 7 = 0$, then $dy / dx =$	A. $-\frac{1}{2}$ B. $-\frac{4}{3}$ C. $\frac{7}{2}$ D. $-\frac{3}{4}$
2033		A. Rational B. Irrational C. Natural D. Odd
2034	Any recurring decimal represents a	A. Irrational no B. Integer C. Rational no D. None of these
2035	$x = \underline{\hspace{2cm}}$ is in the solution of $2x + 3 < 0$	A. 0 B. 2 C. -1 D. -2
2036	If $A = [a_{ij}]_{m \times p}$ and $B = [a_{ij}]_{p \times n}$ then order of BA is	A. $m \times n$ B. $p \times n$ C. $n \times m$ D. None of these
2037	The multiplicative inverse of x such that $x = 0$ is	A. $-x$ B. Does not exist C. $\frac{1}{x}$ D. ± 1
2038		A. $\cos 3x + c$ B. $-\cos 3x + c$
2039	$F(x) = x^x$ decreases in the interval	A. (0, e) B. (0, 1) C. $(-\infty, 0)$ D. None
2040	The slope of the normal at $(5 \cos \theta, 5 \sin \theta)$ to the circle. $x^2+y^2 = 25$ is:	A. $\tan \theta$ B. $\cos \theta / \sin \theta$ C. $-\cot \theta$ D. $-\tan \theta$
2041	The set of integer is	A. Finite group B. A group w.r.t addition C. A group w.r.t multiplication D. Not a group
2042		
2043	Two positive integers whose sum is 30 and their product will be maximum are	A. 12,18 B. 10,20 C. 15,15 D. 14,16
2044	The distance of the point (2,-3) from y-axis is	A. 2 B. -3 C. 1 D. 5
2045	If the angle between two vectors $\underline{u}$ and $\underline{v}$ is 0 or π , then the vectors $\underline{u}$ and $\underline{v}$ are:	A. Orthogonal B. Collinear C. Perpendicular D. None of these
2046		

2046	Question Image	
2047	If $a > 0$ the parabola $y^2 = -4ax$ lies in	A. I and iv quadrant B. I quadrant C. II and III quadrant D. All are incorrect
2048	Question Image	
2049	Sine rule for a triangle states that	A. $\frac{a}{\sin A} = \frac{b}{\sin B} = \frac{c}{\sin C}$ B. $\sin \frac{A}{a} = \sin \frac{B}{b} = \sin \frac{C}{c}$ C. $\frac{a}{\sin A} + \frac{b}{\sin B} + \frac{c}{\sin C}$ D. $2a/\sin A = 2b/\sin B = 2c/\sin C$
2050	The middle term of $(1/x - x)^{10}$ is	A. -152 B. -252 C. 371 D. -421
2051	$x^3 + 2x^2 - 3x + 5$ is _____	A. An equation B. A polynomial C. Proper rational fractions D. Improper rational fractions
2052	Question Image	
2053	If $\cos \theta = 0$, then $\theta =$ _____	A. $n\pi$ B. $(2n + 1)\pi/2$ C. $(2n - 1)\pi/2$ D. $(4n + 1)\pi/2$
2054	Question Image	
2055	Question Image	A. 2 B. 4 C. 3 D. 16
2056	Question Image	
2057	A rectangular hyperbola whose centre is C is cut by any circle of radius r in four points P, Q, R and S. Then $CP^2 + CQ^2 + CR^2 + CS^2 =$	A. r^2 B. $2r^2$ C. $3r^2$ D. $4r^2$
2058	Range of $\sin \theta$ is	
2059	Question Image	A. 1 B. 3 C. 2-i D. -1
2060	Question Image	A. 2 and 9 B. 3 and 2 C. $2/3$ and 9 D. $3/2$ and 6
2061	Question Image	
2062	The expression $x^2 - x + 1$ has	A. One proper linear factor B. No proper linear factor C. Two proper linear factors D. None of these
2063	Question Image	
2064	One second is denoted by	A. 1° B. $1'$ C. $1''$ D. 1 rad
2065	$\sin^2 \pi/6 + \sin^2 \pi/3 + \tan^2 \pi/4 =$ _____;	A. 1 B. 2 C. 3 D. 4
2066	Archimedes approximate the function by horizontal function and the area under f by the sum of small	A. Parallelograms B. Squares C. Rectangles D. - - -

D. Polygons

2067	One root of the equation $\cos x - x + 1/2 = 0$ lies in the interval	
2068	$\sec(-360^\circ) = \underline{\hspace{2cm}}$	A. 0 B. 1 C. 2 D. 3
2069	The lines l_1 and l_2 intersect. The shortest distance between them is	A. Positive B. Negative C. Zero D. Infinity
2070	If A is skew Hermitian Matrix then which of the following is not skew Hermitian matrix	A. A^2 B. A^5 C. A^3 D. A^7
2071	A person standing on the bank of a river observes that the angle subtended by a tree of the opposite bank is 60° , when he retreats 40 m from the bank, he finds the angle to be 30° . The height of the tree and the breadth of the river are	
2072		
2073	If $f(x) = 2x+1$ then $f \circ f(x) = \underline{\hspace{2cm}}$;	A. $4x+3$ B. $2x+3$ C. $4x+1$ D. None of these
2074		A. 2 D. 0
2075		
2076		A. -1 B. 0 C. 1 D. None of these
2077	If a cone is cut by a plane perpendicular to the axis of the cone, then the section is a	A. Parabola B. Circle C. Hyperbola D. Ellipse
2078	Matrix multiplication is	A. Commutative B. Not commutative C. Not associative D. Not distributive
2079	Any point, where f is neither increasing nor decreasing and $f'(x) = 0$ at that point, is called a	A. Minimum B. Maximum C. Stationary point D. Constant point
2080		
2081	The trigonometric equation contains..... trigonometric functions	A. At least one B. At most one C. Exactly one D. None
2082		A. perpendicular vectors B. parallel vectors C. concurrent vectors D. none of these
2083		
2084		A. $2x$ B. $3x^{>2}$ C. 1 D. 0
2085		
2086	$\tan(-135^\circ) = \underline{\hspace{2cm}} \theta$	A. 0 B. 1 C. 2 D. 3
2087		

A. In circle

2088	A circle passing through the vertices of any triangle is called _____	B. Circum circle C. Escribed circle D. None of these
2089	Each point of the feasible region is called	A. Solution B. feasible solution C. Both a & b D. None
2090	If $z_1 = (a,b)$, $z_2 = (c,d)$, then $z_1 z_2 =$ ----- --	A. (ac,bd) B. (ac+bd, ad-bc) C. (ac-bd, ad+bc) D. (ac-bd, ad-bc)
2091	$\sqrt{2} + \sqrt{3} + \sqrt{5} = (\sqrt{2} + \sqrt{3} + \sqrt{5})$: this property is called	A. associative property w.r.t addition B. commutative property C. Closure property w.r.t addition D. Additive identity
2092	A quadratic equation has two	A. roots B. degree C. variables D. constants
2093	a _____ quantity is one that possesses both magnitude and direction.	A. Scalar B. Vector C. Segment D. None of these
2094	If A(a,b) lies on $3x + 2y = 13$ and point B(b,a) lies on $x - y = 5$ then equation of AB is	A. $x - y = 5$ B. $x + y = 5$ C. $x + y = -5$ D. $5x + 5y = 21$
2095	The transpose of a column matrix is a _____	A. Zero matrix B. Diagonal matrix C. Column matrix D. Row matrix
2096	The differential equation of all st. lines which are at a constant distance to form the origin is	
2097	Question Image	
2098	An event having more than one sample point is called	A. Certain event B. Compound event C. Simple event D. None
2099	An equation in which at least one term contains dy/dx , d^2y/dx^2 etc, is called.	A. Differential equation B. Initial condition C. General solution D. Singular equation
2100	Question Image	A. 0 B. 1
2101	Let a_1, a_2, a_3, a_4 and a_5 be such that a_1, a_2 , and a_3 are in A.P., a_2, a_3 and a_4 are in G.P and a_3, a_4 and a_5 are in H.P. Then, a_1, a_3 and a_5 are in	A. G.P. B. A.P. C. H.P. D. None of these
2102	Question Image	
2103	Two coins are tossed twice each. The probability that the head appears on the first toss and the same faces appear in the two tosses is	A. $1/4$ B. $1/2$ C. $1/3$ D. $1/7$
2104	Question Image	
2105	$\cos 3a =$ _____;	A. $3\sin a - 4\sin^3 a$ B. $4\sin a - 3\sin^3 a$ C. $3\cos^3 a - 4\cos a$ D. $4\cos^3 a - 3\cos a$
2106	An expression involving any of the symbols $<, >, \leq$ or $\geq$ is called	A. equation B. inequality C. linear equation D. identity
2107	The positive value of k for which the equation $x^2 + kx + 64 = 0$ has one of the roots 0	A. 4 B. 64 C. 8 D. All values of k
		A. 0 B. 1

2108	Question Image	A. 1 C. 2 D. none of these
2109	The first three terms in the expansion of $(1 - x)^{-1}$ are	A. $1 + x + x^2$ B. $1 - x - x^2$ C. $-1 - x + x^2$ D. $1 - x + x^2$
2110	Which of the following sets is infinite	A. The set of students of your class B. The set of all schools in Pakistan C. The set of natural numbers between 3 and 10 D. The set of rational numbers between 3 and 10
2111	Question Image	A. $(2x+a+b+c)$ B. $(a+b+c)$ C. $(a+b+c+x)$ D. 0
2112	The square roots of negative numbers is called	A. Real no B. Complex no C. Positive no D. Negative no
2113	The two lines $y = 2x$ and $x = 2y$ are	A. Parallel B. Perpendicular C. Equally inclined with axes D. Congruent
2114	Question Image	
2115	Question Image	
2116	$i^3 =$	A. -1 B. i C. -i D. 1
2117	Question Image	
2118	A die is rolled. What is the probability that the dots on the top are greater than 4?	A. $\frac{1}{4}$ B. $\frac{1}{2}$ C. $\frac{1}{3}$ D. $\frac{1}{33}$
2119	Two unbiased dice are thrown. The probability that the total score is > 5 is	A. $\frac{1}{18}$ B. $\frac{7}{18}$ C. $\frac{13}{18}$ D. $\frac{11}{18}$
2120	Question Image	A. Right angled B. Obtuse angled C. Isosceles D. Equilateral
2121	$\forall x, y \in \mathbb{R}$ and $x > 0, y > 0$, if $x > y$	D. None of these
2122	The line $3x - 4y = 0$	A. Is a tangent to the circle $x^2 + y^2 = 25$ B. Is a normal to the circle $x^2 + y^2 = 25$ C. Does not meet the circle $x^2 + y^2 = 25$ D. Does not pass thro' the origin
2123	The equation of the chord of the circle $x^2 + y^2 - 4x = 0$ whose mid-point is $(1, 0)$ is	A. $y = 2$ B. $y = 1$ C. $x = 2$ D. $x = 1$
2124	Every prime number is also	A. Rational number B. Even number C. Irrational number D. Multiple of two numbers
2125	Question Image	A. Closure law of addition B. Closure law of multiplication C. Commutative law of addition D. Commutative law of multiplication
2126	Question Image	
2127	Question Image	A. $a \tan(ax + b) + c$ B. $-a \tan(ax + b) + c$
2128	If the expansion of $(1 + x)^{20}$, then co-efficient of r th and $(r + 4)$ th term are equal, then r is	A. 7 B. 8 C. 9 D. 10
		A. 1 or -1 B. 2 or $\frac{1}{2}$

2129	If $2x^{1/3} + 2x^{-1/3} = 5$, then x is equal to	
2130	Question Image	
2131	Question Image	
2132	Question Image	
2133	Question Image	
2134	Question Image	
2135	The mid point of the line segment joining the points (a,b) and (b,a) is	
2136	The angle of elevation of a tower from a point A due south of it is x and from a point B due east of A is y. If AB = 1, then the height h of the tower is given by	
2137	Question Image	
2138	$(a,0) \times (c, 0) =$	
2139	If eccentricity of ellipse becomes zero then it takes the form of	
2140	The sum of the roots of the equation $x^2 - 6x + 2 = 0$ is	
2141	The radius of the circle $x^2 + y^2 - 6x + 4y + 13 = 0$, is	
2142	Question Image	
2143	The domain of the principal tan function is	
2144	The symbol of irrational is	
2145	$\cos(\alpha - \beta) = \cos\alpha\cos\beta + \sin\alpha\sin\beta$ is true for all	
2146	The parabola $y^2 = x$ is symmetric about	
2147	Question Image	
2148	Question Image	
2149	Which of the following ordered pair is a solution of the inequality $x + 2y < 6$?	
2150	Question Image	

2151	Question Image	A. Reflexive property B. Symmetric property C. Transitive property D. Additive property
2152	The null vector is regarded to be perpendicular to	A. Every vector B. In some cases C. Both a b D. None
2153	Three right angles is the angle of measure	A. 270° B. 180° C. 90° D. $270'$
2154	Question Image	A. 1 B. 9 C. 3 D. 5
2155	If A is an event then which of the following is true	A. $P(A) < 0$ B. $0 \leq P(A) \leq 1$ C. $P(A) > 0$ D. None
2156	Given X,Y are any two sets such that number of elements in set X = 28, number of elements in set Y = 28, and number of elements in set $X \cup Y$ = 54, then number of elements in set $X \cap Y$ =	A. 4 B. 3 C. 2 D. 1
2157	Shifting origin to (-3,2), the new coordinates of (-6,9) are:	A. (-9,7) B. (3,7) C. (-3,7) D. (3,-7)
2158	If there are m rows and n columns in a matrix then its order is	A. $m \times n$ B. $m \times m$ C. $n \times n$ D. $n \times m$
2159	The point which is closet to the focus of a parabola is:	A. vertex B. Chord C. Focus D. Directrix
2160	The synthetic division method is only used to divide a polynomial by	A. quadratic equation B. binomial C. linear equation D. monomial
2161	The first three terms in the expansion of $(1+x)^{-2}$ are _____	A. $1 - 2x + 3x^2$ B. $1 - 2x - 3x^2$ C. $1 + 2x + 3x^2$ D. $-2 - 2x + 3x^2$
2162	The y intercepts and the slope of the line expressed by line expressed by $3x - 2y + 6 = 0$ is	A. $3/2, -3$ B. $-3/3, -3/2$ C. $-3, -3/2$ D. $-3, -3$
2163	Question Image	
2164	$\int x \sin x dx$ is equal to:	A. $\sin x/x + \cos x$ B. $\sin x - \cos x/x$ C. $x \cos x + \sin x$ D. $-x \cos x + \sin x$
2165	Question Image	D. none of these
2166	The polar form of complex number $x \neq 0$ is	A. $r \cos \theta + i r \sin \theta$ B. $r (\cos \theta + i \sin \theta)$ C. $\cos \theta + i r \sin \theta$ D. $i \cos \theta + i \sin \theta$
2167	Derivative of x^3 w.r.t x is	A. 0 B. 1 C. $3x^2$ D. x^3
2168	The law of sines is	
2169	System of linear equation is inconsistent if	A. System has no solution B. System has one solution C. System has two solution D. None of above

2170	The physical quantity which can be specified by a number alongwith unit is called a	A. scalar B. vector C. constant D. none of these
2171	The system of measurement in which the angle is measured in degrees, minutes and seconds is called the	A. circular system B. CGS system C. sexagesimal system D. none of these
2172	Question Image	
2173	In $(x + iy)$ x is the known as	A. Imaginary part of complex number B. Real part of complex number C. Complex number D. None of above
2174	$(0.90)^{1/2}$ is equal to	A. 0.99 B. 0.90 C. 0.80 D. 0.88
2175	If A and B are two sets then intersection of A and B is denoted by	
2176	Question Image	A. Set of whole number B. Rational Numbers C. Complex numbers D. Whole numbers
2177	Question Image	
2178	The magnitude of vector $a = i - 3j + 5k$ is:	A. 3 B. $\sqrt{35}$ C. $\sqrt{17}$ D. $\sqrt{35}$
2179	In one hour the minute hand of a clock turns through	
2180	The set of complex numbers forms	A. Commutative group w.r.t addition B. Commutative group w.r.t multiplication C. Commutative group w.r.t division D. Non commutative group w.r.t addition
2181	N is closed with respect to ordinary	A. addition B. multiplication C. addition and multiplication D. division
2182	The locus of the centre of a circle which touches two given circles externally is:	A. a hyperbola B. an ellipse C. a circle D. a parabola
2183	Question Image	A. Associative property of addition B. Commutative property of addition C. Distributive property D. Additive identity
2184	Question Image	A. 1 B. -1
2185	The distance from the point P(6,-1) to the line $6x - 4x + 9 = 0$ is:	A. 5/7 B. $\sqrt{52}/7$ C. 2/48 D. $49/\sqrt{52}$
2186	The center of the sphere which passes thro' (a, 0, 0), (0, b, 0), (0, 0, c) and (0, 0, 0) is	
2187	Question Image	
2188	To draw conclusions from some experiments or few contacts only is called:	A. Deduction B. Implication C. Conjunction D. Induction
2189	Question Image	
2190	Circle $x^2 + y^2 - 2y - y = 0$ and $x^2 + y^2 - 8y - 4 = 0$:	A. Interesect B. touch externally C. touch internally D. do not touch
2191	Question Image	

2192	Question Image	
2193	Question Image	A. perpendicular vectors B. concurrent vectors C. parallel vectors D. none of these
2194	When the angle between the ground and the sun is 30° , flag pole casts a shadow of 40 m long. the height of the top of the flag is	A. 25m B. 23m C. 12m D. 29m
2195	$\forall a, b, c \in \mathbb{R}$ and $c > 0$, then	A. $a > b \Rightarrow ac < bc$ B. $a > b \Rightarrow ac > bc$ C. $a < b \Rightarrow ac > bc$ D. None of these
2196	The set $(\mathbb{Q}, +)$	A. Forms a group B. Does not form a group C. Contains no additive identity D. Contains no additive inverse
2197	Question Image	A. 110 B. 220 C. 1320 D. None of these
2198	$2\cos^2 \frac{a}{2} =$ _____;	A. $1 + \sin a$ B. $1 - \sin a$ C. $1 + \cos a$ D. $1 - \cos a$
2199	Question Image	C. $\ln f(x) + c$ D. $f(x) - c$
2200	$(1 + 2x)^4 =$ _____	A. $1 + 4x + 6x^2 + 4x^3 + x^4$ B. $1 - 4x + 6x^2 - 4x^3 + x^4$ C. $1 - 8x + 24x^2 - 32x^3 + 16x^4$ D. $1 + 8x + 24x^2 + 32x^3 + 16x^4$
2201	The set $\{\mathbb{Z} \setminus \{0\}\}$ is group w.r.t	A. Addition B. Multiplication C. Division D. Subtraction
2202	The number of divisors of 1029, 1547 and 122 are in	A. A.P. B. G.P. C. H.P. D. None of these
2203	$120^\circ =$ _____	
2204	The number of real tangents that can be drawn to the ellipse $3x^2 + 5y^2 = 32$ passing thro. (3, 5) is	A. 0 B. 1 C. 2 D. Infinite
2205	Graph of the equation $x^2 + y^2 = 4$ is	A. A circle B. An ellipse C. A parabola D. A square
2206	The solution set of $\sin x + \cos x = 0$ is	
2207	Question Image	
2208	If the circumference of a circle is divided into 360 congruent parts, the angle subtended by one part at the centre of the circle is	A. 1° B. 1' C. 1" D. 1 rad
2209	The number of points of intersection of two curves $y = 2 \sin x$ and $y = 5x^2 + 2x + 3$ is	A. 0 B. 1 C. 2 D. None of these
2210	If one end of the diameter of the circle $2x^2 + 2y^2 - 8x - 4y = 2 = 0$ is (2, 3), the other end is:	A. (2, 1) B. (-2, 1) C. (2, -1) D. (1, -1)
2211	Question Image	
2212	If the vertex of the parabola is the origin and directrix is $x + 5 = 0$. then its latus rectum is:	A. 10 B. 5 C. 0 D. 20

2213	A = [3] is a/an	A. Square matrix B. Scalar matrix C. Diagonal matrix D. Identity matrix
2214	The set of first elements of the ordered pairs in a relation is called its	A. domain B. range C. relation D. function
2215		A. One-one but not onto B. One-one and onto C. Onto but not one-one D. Neither one-one nor onto
2216	The interval in which $f(x)=x^3-6x^2+9x$ is increasing	A. $1 \leq x \leq 3$ B. $x \leq 1$ and $x \geq 3$ C. $x \geq 1$ and $x \leq 3$ D. $-\infty \leq x \leq \infty$
2217		
2218	The area of the circle centred at (1,2) and passing through (4,6) is	A. 30π sq.units B. 5π sq.units C. 15π sq.units D. 25π sq.units
2219	The generators of a cone are also called	A. rulings B. apex C. nappes D. ellipse
2220	The condition for $ax^2 + bx + c$ to be expressed as the product of linear polynomials is	A. $b^2 - 4ac = 0$ B. $b^2 - 4ac \geq 0$ C. $b^2 - 4ac \leq 0$ D. $b^2 = 4ac$
2221	The locus of intersection of perpendicular tangents to the parabola $y^2 = 4ax$ is:	A. Axis of the parabola B. Focal chord of the parabola C. The tangent at vertex of the parabola D. a directrix of the parabola
2222		
2223	If $a > b$ or $a < b$ then $a = b$ is a	A. Additive property B. Transitive property C. Trichotomy property of inequality D. None of above
2224		A. $2x + 3$ B. $x^2 + 3 + c$
2225	The seventh term of an A.P whose first term is P and common difference is q. is	A. $P-6q$ B. $P+6q$ C. $P-4q$ D. $P-nq$
2226		A. Additive property of inequality B. Commutative property C. Additive inverse D. Additive identity
2227		
2228	Such fraction which can not be written in the form $\frac{p}{q}$ where p,q and $q \neq 0$, such fractions are called.	A. Fractional numbers B. Rational Numbers C. Even Numbers D. Whole Numbers
2229	If the roots of $ax^2 + b = 0$ are real and distinct then	A. $ab > 0$ B. $a = 0$ C. $ab \leq 0$ D. $a \geq 0, b \geq 0$
2230	$3/\pi = \dots\dots\dots$	A. 54.71×10^3 B. 21×10^3 C. 51×10^3 D. 29×10^3
2231		A. 1 B. -1 C. -1/2 D. 1/2
2232	If $\sin \theta$ and $\cos \theta$ are the roots of the equation $ax^2 - bx + c = 0$, then a, b, c satisfy the relation	A. $b^2 - 4ac = 2ac$ B. $a^2 - 4bc = 2ac$ C. $a^2 + b^2 = c^2$ D. $b^2 + a^2 = 2ac$

2233	Question Image	
2234	$f(x) = ax + b$ will be an identity function if	A. $a = 1, b = 1$ B. $a = 1, b = 0$
2235	Question Image	
2236	If $x-2$ and $x-1$ both are factors of $x^3-3x^2+2x-4p$, then P must equal to	A. 1 B. 2 C. 0 D. -2
2237	The sides of a right angled triangle are in A.P The ratio of sides is	A. 1:2:3 B. 3:4:5 C. 2:3:4 D. 5:8:3
2238	The set Q	A. Forms a group under addition B. Does not form a group C. Contains no additive identity D. Contains no additive inverse
2239	Question Image	
2240	Question Image	A. Rational B. Irrational C. Non-real D. Zero
2241	The set of even prime numbers is	A. {2,4,6,8,10} B. {2,4,6,8,10,12} C. {1,3,5,7,9} D. {2}
2242	A quadratic equation in x is an equation that can be witten in the form	A. $ax^2 + b = 0$ B. $ax^3 + b^2 + c = 0$ C. $ax^2 + bx + c = 0$ D. $ax^3 + bx^3 + cx = 0$
2243	If the domain of the function $f: x \mapsto 2x^3 + 1$ is $\{-1, 2, 3\}$, the range of the function is	A. {3,2,5} B. {1,3,9} C. {-1,-2,-3} D. {3,9,19}
2244	The set X is	A. Proper Subset of X B. Not A subset of X C. Improper Subset of X D. None of these
2245	Digit in the unit place of the number $183! + {}_3^{183}$	A. 7 B. 6 C. 3 D. 0
2246	A farmer possesses 100 hectometers of land and wants to grow corn and wheat. Cultivations of corn requires 3 hours per hectometer while cultivation of wheat requires 2 hours per hectometer. Working hours cannot exceed 240. If he gets a profit of Rs. 20 per hectometer for corn and Rs. 15 per hectometer for wheat. The profit function for the farmer is	A. $P(x, y) = 20x + 15y$ B. $P(x, y) = 2x + 3y$ C. $P(x, y) = x + y$ D. $P(x, y) = 3x + 2y$
2247	Question Image	
2248	Question Image	
2249	The set of the first elements of the ordered pairs forming a relation is called its	A. Function on B B. Range C. Domain D. A into B
2250	Question Image	A. $\sec x \tan x$ B. $-\operatorname{cosec} x \cot x$ C. $\sec^2 x$ D. $-\sin x$
2251	A function whose range is just one element is called	A. One-one function B. Constant function C. Onto function D. Identity function
2252	The perimeter of a sector of a central angle of measure 1 radian out off an are of length 35cm is	A. 35 cm B. 70 cm C. 140 cm D. 105 cm

2253	A Series which does not coverage to a Unique sum is called	A. Harmonic Series B. Oscillatroy Series C. Arithmetic Series D. None of these
2254	If d_1 is the distance between (0,0) and (1,2) and d_2 is the distance between (0,0) and (2,1) then	A. $d_1 < d_2$ B. $d_1 < d_2$ C. $d_1 > d_2$ D. none of these
2255	Write down the power set of {9, 11}	
2256	The solution of equation $x^2 + 2 = 0$ in the set of real number is	A. Infinite set B. Singleton set C. Null set D. None of these
2257	$(n + 2) (n + 1) n =$ _____	
2258	Question Image	
2259	Question Image	A. 7 B. 5 C. 6 D. None of these
2260	Period of $\sin x$ is	
2261	if one root of the equation $ix^2 - 2(i + 1)x + (2 - i) = 0$ is $2 - i$ then the other root is	A. $-i$ B. $2 + i$ C. i D. $2 - i$
2262	System of linear equations is inconsistent if	A. System has no solution B. System has one solution C. System has two solution D. None of above
2263	There may be _____ feasible solution in the feasible region	A. Infinite B. Finite C. Defined D. None of above
2264	The angle between the vectors $\underline{u} = 2\hat{i} - \hat{j} + \hat{k}$ and $\underline{v} = -\hat{i} + \hat{j}$ is:	A. $3\pi/2$ B. $2\pi/3$ C. $5\pi/6$ D. $\pi/3$
2265	The fifteenth term of $(3-a)^{15}$ is	A. $-17a^{12}$ B. $-945a^{13}$ C. $-941a^{13}$ D. $-515a^{12}$
2266	Question Image	
2267	The sum of first 60 natural numbers is	A. 1830 B. 3660 C. 1640 D. 1770
2268	Period of Tangent function is	A. 0° B. π C. π D. 2π
2269	Question Image	
2270	A function in which the variable appears as exponent is called:	A. An identity function B. A logarithmic function C. an exponential function D. A rational function
2271	Question Image	
2272	The sum of even coefficient in the binomial expansion is	A. 2^{n+1} B. 2^n C. 2^{n-1} D. $2n$
2273	Find the geometric mean between 4 and 16	

2274	Question Image	
2275	If $y = x^n$ then dy/dx equals:	A. nx B. x^{n-1} C. nx^{n-1} D. n
2276	The probability of getting a number between 1 and 100 which is divisible by 1 and itself if only is	A. $1/4$ B. $1/2$ C. $3/4$ D. $25/98$
2277	64. A point (x, y, z) moves parallel to xy plane. Which of the three variables x, y, z remain fixed?	A. z B. x C. y D. x and y
2278	Question Image	
2279	The solution set of the inequality $ax + by < c$ is	A. straight line B. half plane C. parabola D. none of these
2280	$3x + 4 > 0$ is	A. equation B. identity C. inequality D. none of these
2281	Question Image	
2282	Area of the triangle whose vertices are $(2, 3), (0, 1), (0, 0)$ is	A. 6 B. 2 C. 4 D. 1
2283	Question Image	
2284	Question Image	
2285	The zero vector is	A. $[0, 0, 0]$ B. $[1, 1, 1]$ C. $[0, 1, 0]$ D. $[0, 0, 1]$
2286	Question Image	A. Rational fraction B. Proper fraction C. Improper rational fraction D. None of these
2287	In triangle ABC, in which $b=95, c=34, a=52$ then the value of $a=$	A. 18 cm B. 18.027 cm C. 20.7 cm D. 19 cm
2288	Two circles $x^2 + y^2 + 8x - 9 = 0$ and $x^2 + y^2 + 6y + k = 0$ touch internally if the value of k is	A. $k = 9$ B. $k = \pm 9$ C. $k = -9$ D. $k = 11$
2289	A sequence is a functions whose domain is a subset of the set of	A. Natural numbers B. Real numbers C. Whole numbers D. Rational numbers
2290	Question Image	
2291	Question Image	A. $1/2$ B. 2 C. $1/4$ D. 4
2292	In-radius is denoted by	A. r B. η C. r^2 D. R
2293	$a \cdot a^{-1} = a^{-1} \cdot a = 1$ is a	A. Commutative law of multiplication B. Multiplicative identity C. Associative law of multiplication D. Multiplicative inverse
2294	Range if $y = \cos x$ is	A. $-1 \leq y \leq 1$ B. $-1 < y < 1$ C. $-\infty < x < +\infty$ D. None of these

2295	Which one the valid rood of $3x^3 - 8x^2 - 5x + 8 = ?$	A. 4 B. 3 C. 8 D. A and B both
2296	If distance of (a,b) from origin is 5 then	A. $a^2 + b^2 = 5$ B. $a = 5$ C. $b = 5$
2297	The conic is a parabola, when:	A. $e > 1$ B. $e < 1$ C. $e = 1$ D. $e = 0$
2298	The maximum value of $12 \sin \theta - 9 \sin^2 \theta$ is x	A. 3 B. 4 C. 5 D. None of these
2299	Question Image	
2300	The symbol $\ni$ stand for	A. Such that B. There exist C. For all D. Belongs to
2301	A person standing on the bank of a river observes that the angle of elevation of the top of a tree on the opposite bank of the river is 60° and when he retires 40 meters away from the tree the angle of elevation becomes 30° . The breadth of the river is	A. 40 m B. 30 m C. 20 m D. 60 m
2302	If (x,y) are the coordinates of a point P, then the first number of the ordered pair is called:	A. Ordinate B. Abscissa C. quadrant D. Cartesian
2303	$n! > 2^{n-1}$ is true when	A. $n \leq 3$ B. $n \leq 6$ C. $n \geq 4$ D. $n \leq 6$
2304	If $D = \{a\}$, the $P(D) =$	A. $\{a\}$ B. <math>\langle p \text{ class="MsoNormal"><!--[if gte msEquation 12]><m:oMathPara><m:oMath><i style='mso-bidi-font-style:normal'><m:r></m:r></i></m:oMath></m:oMathPara><![endif]><!--[if !msEquation]><!--[if gte vml 1]><v:shapetype id="_x0000_t75" coordsize="21600,21600" o:spt="75" o:preferrelative="t" path="m@4@5l@4@11@9@11@9@5xe" filled="f" stroked="f"> <v:stroke jointstyle="miter"/> <v:formulas> <v:f eqn="if lineDrawn pixelLineWidth 0"/> <v:f eqn="sum @0 1 0"/> <v:f eqn="sum 0 0 @1"/> <v:f eqn="prod @2 1 2"/> <v:f eqn="prod @3 21600 pixelWidth"/> <v:f eqn="prod @3 21600 pixelHeight"/> <v:f eqn="sum @0 0 1"/> <v:f eqn="prod @6 1 2"/> <v:f eqn="prod @7 21600 pixelWidth"/> <v:f eqn="sum @8 21600 0"/> <v:f eqn="prod @7 21600 pixelHeight"/> <v:f eqn="sum @10 21600 0"/> </v:formulas> <v:path o:extrusionok="f" gradientshapeok="t" o:connecttype="rect"/> <o:lock v:ext="edit" aspectratio="t"/> </v:shapetype><v:shape id="_x0000_i1025" type="#_x0000_t75" style="width:6.75pt; height:14.25pt"> <v:imagedata src="file:///C:/Users/Softsol/AppData/Local/Temp/msohtmlclip1/01/clip_image001.png" o:title="" chromakey="white"/> </v:shape><![endif]><!--[if !vml]><!--[endif]><!--[endif]><o:p></o:p></p> C. $\{ \emptyset, \{a\} \}$ D. $\{ \emptyset, a \}$</math>
2305	Question Image	
2306	A line joining two distinct points on a parabola is called a _____ of the parabola.	A. Chord B. Tangent C. Lust rectum D. directrix
2307	The sum even binomial coefficient of $(3+2x)^5$ is _____ term	A. 16 B. 30 C. 8 D. 32
2308	A diagonal matrix is always	A. Identity B. Triangular C. Scalar D. Non-singular
2309	$\cos(180^\circ - \theta) =$	A. $\sin \theta$ B. $-\cos \theta$ C. $\sin \theta$ D. $-\sin \theta$

		C. $-\sin x$ D. None of above
2310	If a matrix has m rows and n columns, then $m \times n$ is called the	A. dimension B. determinants C. symmetric D. Column matrix
2311	If $f(x) = 2x^3 + 1$ then $f^{-1}(0) =$	A. 0 B. 1 C. 6 D. None of these
2312	The radius of the circle $(x - 1)^2 + (y + 3)^2 = 61$ is	A. 8 B. 4 C. 64 D. None of these
2313	A dice is rolled. The probability that the dots on the top are greater than 4 is	A. 1/6 B. 1/3 C. 1/2 D. 1
2314	The maximum value of the quadratic function $f(x) = -2x^2 + 20x$, is	A. 4 B. 3 C. 50 D. 7
2315	$\cot \theta = \sin 2\theta$ if $\theta =$	
2316	202.04 is an example of	A. Recurring decimals B. Non-recurring decimals C. Terminating decimals D. None of above
2317	Question Image	A. At B. -A C. A D. A-1
2318	Question Image	A. (2x4) B. (2x7) C. (2x3) D. (7x2)
2319	Name the property used in $4.1 + (-4.1) = 0$	A. Additive inverse B. Multiplication inverse C. Additive identity D. Multiplication identity
2320	Question Image	
2321	Question Image	
2322	The angle of depression of the point at a distance 70 meters from the foot of the tower from the top of the tower is 45° . The height of the tower is	A. 37m B. 97m C. 101m D. 70m
2323	Question Image	
2324	If (0, 0) and (1, 0) are the end points of a diameter, then the equation of the circle is	
2325	$d / dx (\cot x) =$	A. $\sec x \tan x$ B. $-\csc^2 x$ C. $\sec^2 x$ D. $1/\cot^2 x$
2326	Question Image	A. The law of sines B. The law of tangents C. The pythagorus theorem D. None of these
2327	If the pth, qth, and rth terms of an A.P. are in G.P., then the common ratio of the G.P. is	
2328	If origin is the mid point of (a, -3) and (-5, b) then	A. $a = -5, b = -3$ B. $a = 5, b = 3$ C. $a = -5, b = 3$ D. $a = 5, b = -3$
2329	Question Image	A. 0 B. abc C. 1/abc D. None of these

2330	The two lines $5x + 7y = 35$ and $3x - 7y = 21$, intersect at the point:	A. (1,2) B. (1,2) C. (2,7) D. (7,0)
2331	Question Image	
2332	The value of the expression $3 \cos \theta + 4 \sin \theta$ lies between	A. -7 and 7 B. -25 and 25 C. -1 and 1 D. -5 and 5
2333	The law of sines can be used to solve	A. Right angle triangle B. Isosceles triangle C. oblique triangle D. hexagon
2334	Question Image	B. $6x + 2 + c$ C. $6x + x^2 + c$ D. $6x^3 + x^2 + x$
2335	Question Image	A. (1,7/3) B. (1, 7/5) C. (1, 11/7) D. (1, 3/5)
2336	Question Image	
2337	Given two independent event A and B such that $P(A) = 0.30$ and $P(B) = 0.60$. Probability of getting neither A nor B is	A. 0.28 B. 0.13 C. 0.12 D. 0.42
2338	Which of the following notation defines $A \times B$	
2339	Question Image	
2340	If $x = 1 - t^2$ and $y = 3t^2 - 2t^3$ then $dy/dx =$	A. (1-t) B. $3(1+t)$ C. $3(t-1)$ D. $3/1-t$
2341	$x^4 - 3x^3 + 3x + 1 = 0$ is called _____	A. Reciprocal equation B. Exponential equation C. Radical equation D. None of these
2342	Question Image	A. >I and>I>I quadrants B. >I and>I and>I>I quadrants C. >I and>I and>I quadrants D. none of these
2343	Question Image	
2344	Question Image	
2345	If x, y, z are the p th, q th, r th terms of an A.P. and also of G.P., then $x^p \cdot y^q \cdot z^r =$	A. xyz B. 0 C. 1 D. None of these
2346	A vector with magnitude one is called	A. constant vector B. unit vector C. zero vector

D. null vector

2347	A chimney is such that on walking towards it 50 m in a horizontal line through its base the angular elevation of its top changes from 30° to 45° . The height of the chimney is	
2348	Roots of the equation $x^2 + 7x + 12 = 0$ are	A. {3, -4} B. {-3, 4} C. {3, 4} D. {-3, -4}
2349	When rational fraction is separated into partial fractions, the result is	A. an identity B. A fraction C. A partial sum D. Improper fraction
2350	If A is non singular, and B is an $n \times n$ matrix, such that $B = 0_{n \times n}$ then $AB =$	A. A B. Null C. A^{-1} D. None singular
2351		A. Orthogonal B. Involutary C. Idempotent D. Nilpotent
2352	A relation in which the equality is true only for some values of the known is called _____	A. An identity B. An equation C. A polynomial D. None of these
2353		
2354	In a country, 55% of the male population has houses in cities while 30% have houses both in cities and in village. Find the percentage of the population that has house only in villages.	A. 45 B. 30 C. 25 D. 50
2355	The mid point of the line joining the points $P(x_1, y_1)$ and $Q(x_2, y_2)$ is	
2356	The period of the function $f(x) = \sin^4 x + \cos^4 x$ is	A. π B. $\frac{\pi}{2}$ C. 2π D. None of these
2357	If a, b, c are three non-coplanar vector then $[a + b, b + c, c + a] =$ _____	A. $[a, b, c]$ B. $2[a, b, c]$ C. $[abc] \cdot 2$ D. $2[abc]$
2358	A function in which the second elements of the order pairs are distinct is called	A. Onto function B. One-one function C. Identity function D. Inverse function
2359	$\cos 2\alpha =$	A. $1 - 2 \sin^2 \alpha$ B. $\sin^2 \alpha + \cos^2 \alpha$ C. $\sin^2 \alpha - \cos^2 \alpha$ D. None of these
2360	The set $\{x + iy \mid x, y \in \mathbb{Q}\}$ forms a group under the binary operation of	A. Addition B. Multiplication C. Division D. Both addition and multiplication
2361	The 6th term of the sequence 7, 9, 12, 16, is	A. 27 B. 32 C. 20 D. 19
2362		A. $\cos x + c$ B. $-\sin x + c$ C. $-\cos x + c$ D. $\sin x + c$

2363	Question Image	A. 1 B. 2 C. 3
2364	A fraction in which the degree of the numerator is greater than or equal to the degree of the denominator is called	A. A proper fraction B. An improper fraction C. An equation D. An identity
2365	If the distance of any point on the curve from any of the two lines approaches zero then it is called	A. Axis B. Directrices C. Asymptotes D. None
2366	Question Image	A. $(a + b)c = ac + bc$ B. $a + b = b + a$ C. $(a + b) + c = a + (b + c)$ D. $a(b + c) = ab + ac$
2367	If the trace of matrix A is 5, then the trace of the matrix 3A is	A. 3/5 B. 5/3 C. 8 D. 15
2368	Which is not included in the domain of $\cos^{-1}x$	A. 0 B. 1 C. -1 D. 2
2369	$\cos^2 x + \sin^2 x$	A. an even function B. an odd function C. an even and implicit function D. neither even nor a odd
2370	The set of integers is a subset of	A. The set of natural numbers B. The set of whole numbers C. The set of prime numbers D. The set of rational numbers
2371	an $-an-1, \forall n \in \mathbb{N} \wedge n > 1$ in an A.P is called	A. Common difference B. nth term C. Common ratio D. None of these
2372	A sequence is a function whose domain is	A. $\mathbb{N}$ B. Subset of $\mathbb{N}$ C. $\mathbb{R}$ D. None of these
2373	Give A and B are matrices of order 3, then $(A+B)' =$	A. $A' + B'$ B. $1/A + 1/B$ C. $1/a' + 1/B'$ D. $A^{<\sup>-1</sup>} + B^{<\sup>-1</sup>}$
2374	Question Image	A. 2 C. -2 D. none of these
2375	(1, 2) is in the solution of the inequality	A. $2x + y \geq 8$ B. $2x + y \leq 6$ C. $2x - y \geq 1$ D. $2x + 3y \leq 2$
2376	Question Image	
2377	The in-centre of triangle whose vertices are (0,0), (5,12) and (16,12) is:	A. (9,7) B. (2,7) C. (9,2) D. (7,9)
2378	Find a if 1 is a root of the equation $x^2 + ax + 2 = 0$	A. 3 B. -3 C. 2 D. 0
2379	Question Image	
2380	Question Image	
2381	graph of sine function is bounded between lines	A. $y \pm 1 = 0$ B. $x \pm 1 = 0$ C. $x \pm y = 0$ D. None of these
2382	Question Image	A. $\cos 2x = \sin 4y$ B. $\cos 4y = \cos 2x$ C. $\cos 3y = \sin 4x$ D. None of these

2383	If $Z_1 = 1 + i$, $Z_2 = 2 + 3i$, then $ Z_1 - Z_2 = ?$	
2384	The unit vector along x-axis is	D. none of these
2385	Question Image	
2386	Question Image	A. Three Independent Variables B. Two independent constant C. Three independent parameters D. Three independent constant
2387	Question Image	
2388	For a positive integer n	A. $n! = n(n + 1)$ B. $n! = n(n+1)!$ C. $n! = n(n - 1)$ D. $n! = n(n - 1)!$
2389	Deduction is mostly used in	A. elementary mathematics B. natural science C. higher mathematics D. medicine
2390	Question Image	A. -1 B. 1 C. 2 D. -2
2391	The sum of complex number (a,b) and (c,d) is	
2392	u,v,w and $u \times (v \cdot w)$ are	A. Equal B. Parallel C. Additive immense of each other D. Meaningless
2393	Question Image	A. Improper rational fraction B. Rational fraction C. Proper rational fraction D. None of above
2394	Question Image	A. I quadrant B. II quadrant C. III quadrant D. IV quadrant
2395	For which of the following ordered pairs (s, t) is $s + t > 2$ and $s - t < -3$?	A. (3, 2) B. (2, 3) C. (1, 8) D. (0, 3)
2396	The perpendicular bisector of any chord of a circle	A. Passes through the centre of the circle B. Does not pass through the centre of the circle C. May or may not pass through the centre of the circle D. None of these
2397	Question Image	A. Associative law of addition B. Commutative law of addition C. Additive identity D. Closure law of addition
2398	Question Image	
2399	Question Image	A. $-\operatorname{cosec}^2 x$ B. $-\sec^2 x$ C. $-\operatorname{cosec} x \cot x$ D. $\operatorname{cosec} x$
2400	Question Image	
2401	Question Image	
2402	Question Image	A. $\frac{\pi}{3}$ B. $\frac{\pi}{4}$ C. $\frac{\pi}{2}$ D. π
2403	Question Image	B. $\ln(x^2 - x + 1)^4 + c$
2404	If the lines $2x - 3y - 1 = 0$, $3x - y - 5 = 0$ and $3x + py + 8 = 0$ meet at a unique point then	A. $p = -14$ B. $p = -1$ C. $p = 0$ D. $p = 12$
		A. $x \cot x + \ln \sin x $

2405	$\int x/\sin^2 x \, dx$ is equal to:	B. $-x \cot x - \ln \sin x $ C. $x \cot x - \ln \sin x $ D. $x \tan x - \ln \sec x $
2406	Question Image	A. 0 B. -1 C. 1 D. not defined
2407	1.4142135... is _____	A. A natural number B. A rational number C. A prime number D. An irrational number
2408	Which shape of the following objects are approximately parabolic ares?	A. Light reflectors B. Force C. Weight of the pendul D. None of these
2409	Question Image	
2410	The difference of two consecutive terms of an A.P is called the	A. Common difference B. Common ratio C. Geometric series D. Geometric mean
2411	In R the right cancellation property w.r.t. addition is	
2412	Both the roots of the equation $(x-b)(x-c) + (x-c)(x-a) + (x-a)(x-b) = 0$ are always	A. Positive B. Negative C. Real D. None of these
2413	Question Image	
2414	Question Image	A. 5 C. -5 D. none
2415	If $P = \{x/x = p/q \text{ where } p, q \in \mathbb{Z} \text{ and } q \neq 0\}$, then P is the set of	A. Irrational numbers B. Even numbers C. Rational numbers D. Whole numbers
2416	Question Image	
2417	Question Image	
2418	$ax+by+c = 0$, represent a	A. circle B. parabola C. straight line D. quadratic circle
2419	Power set of X i.e $P(X)$under the binary operation of union U	A. Forms a group B. Does not form a group C. Has no identity element D. Infinite set although X is infinite
2420	The additive inverse of 1 is	A. 1 B. -1 C. 0 D. Does not exist
2421	A number A is called the arithmetic mean between a and b if a, A, b is _____	A. Arithmetic sequence B. Geometric sequence C. Harmonic sequence D. Arithmetic sequence
2422	The law of consines is	
2423	Question Image	
2424	The transpose of a square matrix is a	A. Column matrix B. row matrix C. Inverse matrix D. None of these
2425	If a force $F = 2i + j + 3k$ acts at point (1,-2,2) of a body then the moment of F about a pint lying on the line of action of the force is	A. 5 B. Equal to the moment of the force about origin C. 0 D. Cannot be found
2426	If x,y are two positive distinct numbers then	A. $A \geq G \geq H$ B. $A \leq G \leq H$ C. $A = G = H$ D. None of these

2427	A square matrix A for which $A^t = -A$ is called a	A. Column matrix B. Symmetric matrix C. Skew-symmetric matrix D. Row matrix
2428	Question Image	
2429	Which one is quadrantal angle	A. 8181710° B. 2345° C. -8181180° D. -2344°
2430	Express $\cos 320^\circ$ between 0° and 45°	A. $\cos 45^\circ$ B. $\cos 30^\circ$ C. $-\cos 40^\circ$ D. $\cos 40^\circ$
2431	The period of the trigonometric function $y = \sin x \cos x$ is	A. 2π B. π C. 4π D. $\pi / 2$
2432	$r + 3 > 5$ then which is true	A. $r + 2 \geq 4$ B. $r + 2 \leq 4$ C. $r + 2 = 4$ D. None
2433	$\sqrt[3]{8.6}$ is approximately equal to	A. 2.488 B. 2.48 C. 2.0488 D. 2.05
2434	Question Image	A. $X = 100 \sin \theta$ B. $X = 10 \sin \theta$ C. $X = 100 \sec \theta$ D. None of these
2435	The trigonometric function are continuous whenever	A. They are defined B. their limit exist C. Their period is given D. All are incorrect
2436	The length of perpendicular from $(-2, 3)$ to the line $y = 2x - 3$ is:	A. $5\sqrt{2}$ B. 6 C. $2\sqrt{5}$ D. 7.5
2437	The set $\{1, -1, i, -i\}$	A. Form a group w.r.t addition B. Form a group w.r.t multiplication C. Does not form a group w.r.t multiplication D. Not closed under multiplication
2438	Question Image	D. None of these
2439	$x = \underline{\hspace{2cm}}$ is in the solution of $2x - 5 > 0$	A. 0 B. 2 C. -2 D. 3
2440	Question Image	D. none of these
2441	Question Image	A. I B. $14I$ C. 0 D. None of these
2442	Question Image	A. $3 \sec^2 x$ B. $3 \sec^2 3x$ C. $\sec^2 3x$ D. $\sec^2 x$
2443	Question Image	D. none of these
2444	Question Image	
2445	Question Image	
2446	Question Image	

A. $[1, -1]$
 B. $[-1, 1]$

2447	The range of $y = \sin x$ is _____	A. $[-1, 1]$ C. $[0, -1]$ D. $[-\infty, \infty]$
2448	The equation of the sphere thro' the origin and making intercepts a, b, c on co-ordinate axes is	A. $x^2 + y^2 + z^2 + ax + by + cz = 0$ B. $x^2 + y^2 + z^2 - 2ax - 2by - 2cz = 0$ C. $x^2 + y^2 + z^2 = a + b + c$ D. $x^2 + y^2 + z^2 - ax - by - cz = 0$
2449	There are _____ basic techniques for solving a quadratic equation	A. Two B. Three C. Four D. None of these
2450	Range of $\cos x$ is _____	A. $[-1, 1]$ B. $\mathbb{R}$ C. Negative real numbers D. $\mathbb{R} - \{x \mid -1 \leq x \leq 1\}$
2451	The points (5, -4, 2), (4, -3, 1), (7, -6, 4), (8, -7, 5) are vertices of a	A. Square B. Parallelogram C. Rectangle D. Rhombus
2452	What is the circular measure of the angles between the hands of which at 4 o'clock	A. $\pi/6$ B. $3\pi/2$ C. $\pi/4$ D. $2\pi/3$
2453	If $n(X) = 18$, $n(X \cap Y) = 7$, $n(X \cup Y) = 40$ then $n(Y) =$	A. 1 B. 12 C. 5 D. 29
2454		A. $[0, 0, 0]$ B. $[1, 0, 0]$ C. $[0, 1, 0]$ D. $[0, 0, 1]$
2455		A. 56 B. 7 C. 8 D. $8/7$
2456	Name the property used in $4 + 9 = 9 + 4$	A. Associative property of addition B. Commutative property of addition C. Distributive property D. Additive identity
2457	$-2, 1, 4, 7, \dots$ is _____	A. Harmonic sequence B. Arithmetic sequence C. Geometric sequence D. Arithmetic series
2458	$\tan \theta/2$	
2459	The order axioms are satisfied by set of	A. $\mathbb{C}$ B. $\mathbb{C}$ and $\mathbb{R}$ C. $\mathbb{R}$ D. None of these
2460		A. $^{10}C_6$ B. $^{10}C_5$ C. $^{10}C_4$ D. None
2461	Which of the following is not a unit vector	A. $[1, 1, 1]$ B. $[0, 1, 0]$ C. $[0, 0, 1]$ D. $[1, 0, 0]$
2462	Which of the following is not a solution of system of inequalities $2x - 3y \leq 6$, $2x + y \geq 2$, $x + 2y \leq 8$, $x \geq 0, y \geq 0$	A. (1,0) B. (0,4) C. (3,0) D. (8,0)
2463	With usual notations $b^2 = a^2 + c^2 - 2ac \cos$ is called _____;	A. None of these B. Law of sines C. Law of cosines D. Law of tangents
2464	If the cutting plane is slightly tilted and cuts only one nappe of the cone, the resulting section is:	A. an ellipse B. Circle C. a hyperbola D. a parabola

D. a parabola

2465	Question Image	
2466	If A and B are two matrices such that $AB = B$ and $BA = A$ then $A^2 + B^2 =$	A. $2 AB$ B. $2 BA$ C. $A + B$ D. AB
2467	The value of x, and y, when $(x + iy)^2 = 5 + 4i$	A. $X = 2, y = 1$ B. $X = -2, y = 1$ C. $X = 2, y = -1$ D. $X = 2, y = 2$
2468	Question Image	
2469	There are two middle terms in the expansion of $(a+x)^n$ if n is	A. Even +ve integer B. +ve integer C. Odd +ve integer D. All
2470	Name the property used in $a(b-c) = ab - ac$	A. commutative property of multiplication B. distributive property of multiplication C. associative property of multiplication D. multiplicative inverse
2471	The polynomial $x - a$ is a factor of the polynomial $f(x)$ if and only if	A. $f(a)$ is positive B. $f(a)$ is negative C. $f(a) = 0$ D. None of these
2472	$x = -1$ is in the solution of the inequality	A. $x + 5 \leq 0$ B. $2x + 3 < 0$ C. $x \geq 0$ D. $2x + 3 \geq 0$
2473	The expansion of $(1 + 2x)^{-2}$ is valid if	A. $x \leq 1/2$ B. $x \leq 1$ C. $x \leq 2$ D. $x \leq 3$
2474	If $f(x) = \cos x$ then $f(0)$ is	A. 0 B. 1 C. $1/2$
2475	If circumference of circle is divided into 360 congruent parts the angle subtended by one part at the centre of circle is	A. 1 degree B. 1 second C. 1 minute D. 1 radian
2476	Riaz, Saba, Maria, Shehzad are to give speeches in a class. The teacher can arrange the order of their presentation in	A. 4 ways B. 12 ways C. 256 ways D. 24 ways
2477	The value of x and y when $(x + iy)^2 = 5 - 4i$	A. $x = 2, y = -1$ B. $x = -2, y = 1$ C. $x = 2, y = -i$ D. $x = 2, y = 2$
2478	Question Image	
2479	If $y = \sin(ax+b)$ then $y^4 =$ _____ :	A. $\sin^4(ax+b)$ B. $a^4 \sin(ax+b)$ C. $a^4 \cos(ax+b)$ D. None of these
2480	Express as a sum or difference: $2 \sin 5\theta \cos \theta$	A. $\cos 4\theta - \cos 2\theta$ B. $\sin 4\theta + \sin 2\theta$ C. $\cos 4\theta + \cos 2\theta$ D. $\sin 4\theta - \sin 2\theta$

2481	Question Image	
2482	The process of finding the unknown elements in triangle is called the	A. solution of the triangle B. Mean difference C. Engineering distance D. angle of depression
2483	The measure of the angle subtended at the centre of the circle by an arc, whose length is equal to the radius of the circle is	A. 1° B. $1'$ C. $1''$ D. 1 rad
2484	Question Image	A. -1 B. 0 C. 1 D. undefined
2485	In the interval $0 \leq x \leq \pi$, the sine is	A. Not a function B. Not defined C. Infinity D. Not one-to-one function
2486	$16^{\circ}30' =$	A. 16.5° B. 16.2° C. 16.60° D. 19.9°
2487	If $y=f(x)$ is a function then y is called	A. dependent variable B. independent variable C. constant D. none of these
2488	The quadratic equation $8 \sec^2 \theta - 6 \sec \theta + 1 = 0$ has	A. Infinitely many roots B. Exactly two roots C. Exactly four roots D. No roots
2489	Function is a special type of	A. relation B. ordered pairs C. cartesian product D. sets
2490	The distance between two points $P(x_1, y_1)$ and $Q(x_2, y_2)$ is	
2491	An equation which holds good for all values of the variables is called	A. Identity B. fraction C. mixed form D. Partial equation
2492	The differential equations of all conics whose axes coincide with the co-ordinate axis is	
2493	The series obtained by adding the terms of an arithmetic sequence is called the	A. Infinite series B. Harmonic series C. Geometric series D. Arithmetic series
2494	Question Image	A. Even B. Odd C. Prime D. None of these
2495	A polynomial $P(x)$ has a factor $(x-a)$ if $P(a) =$	A. a B. x C. 1 D. 0
2496	If $\cos 20^\circ = K$ and $\cos x = 2K^2 - 1$, then the possible values of x between 0° and 360° are	A. 140° B. 50° and 140° C. 50° and 130° D. 40° and 320°
2497	$\frac{3}{4}$ is _____	A. An odd number B. An even number C. A natural number D. A rational number
2498	$a_n - a_{n-1}$ will be common difference in an A.P if	A. $n = 1 \forall n \in \mathbb{N}$ B. $n > 1 \wedge n \in \mathbb{N}$ C. $n \in \mathbb{Z}$ D. None of the above
2499	Question Image	A. 1 B. -1 C. 5 D. 2

2500	If ΔABC is right triangle then the law of Cosines reduces to	A. The law of Sines B. The law of cosines C. The law of tangents D. The law of cosines
2501	The probability that a slip of numbers divisible by 4 is picked from the slips of number 1,2,3,4,.....10 is	A. $\frac{1}{5}$ B. $\frac{2}{5}$ C. $\frac{1}{10}$ D. $\frac{3}{10}$
2502	The set {1, -1, 1, -1}, form a group under	A. Addition B. Multiplication C. Subtraction D. None
2503	To each element of a group there corresponds inverse element	A. Two B. One C. No D. Three
2504	Question Image	
2505	Question Image	
2506	The axis of the parabola $x^2 = 4ay$ is:	A. $y = 0$ B. $x = 0$ C. $x = -a$ D. $y = a$
2507	Question Image	D. none of these
2508	Question Image	
2509	Question Image	
2510	$\cot \theta = \sin 2\theta$ if $\theta =$	
2511	Question Image	A. Associate law of addition B. Commutative law of addition C. Additive identity D. Closure law of addition
2512	QUQ'	
2513	Question Image	C. 1 D. 0
2514	The domain of a finite sequence is a	A. Set of natural numbers B. R C. Subset of N D. Proper subset of N
2515	If the terminal rays of an angle falls on any axis then the angle is called	A. Allied angle B. Acute angle C. Standard position D. Quadrantal angle
2516	The value of 289° in radians is	A. 4.05 B. 3.02 C. $\frac{\pi}{2}$ D. 5.04
2517	The distance between the points A(-8,3) and B(2,-1) is	B. 16 D. none of these

Q. No.	Q. Text	Options
2518	$5x^3 + 3x -$ is a _____	A. Polynomial of degree 3 B. Polynomial of degree 2 C. Polynomial of degree 1 D. Polynomial of degree 0
2519	A, G, H are in	A. A.P B. G.P C. H.P D. None of these
2520	Question Image	A. $\cos x$ B. $\sec x \tan x$ C. $\sec^2 x$ D. $-\operatorname{cosec}^2 x$
2521	$\tan 294^\circ =$ _____;	A. $\tan 24^\circ$ B. $-\tan 24^\circ$ C. $\cot 24^\circ$ D. $-\cot 24^\circ$
2522	Two cards are drawn at random from a well shuffled pack of cards. The probability that at least one of them is a face card is	A. $\frac{3}{17}$ B. $\frac{5}{17}$ C. $\frac{7}{17}$ D. $\frac{9}{17}$
2523	For a square matrix A, if $A = A^t$, then A is called	A. Matrix B. Transpose C. Symmetric D. Non-symmetric
2524	The points A(+1,-1), B(3,0), C(3,7), D(1,8) are vertices of	A. Square B. Parallelogram C. Rectangle D. Trapezium
2525	$\sin(\alpha + \beta) + \sin(\alpha - \beta)$	A. $2 \sin \alpha \cos \beta$ B. $2 \cos \alpha \sin \beta$ C. $\sin \alpha \cos \beta$ D. None of these
2526	The mid point of the line segment joining the points A(-8,3) and B(2,-1) is	A. (-3,1) B. (-6,2) C. (5,2) D. (-5,2)
2527	The area under the curve $y = \frac{1}{x^2}$ between $x = 1$ and $x = 4$ is:	A. -25 B. 0.75 C. -0.35 D. -10
2528	$\{x : x \in \mathbb{Z} \text{ and } x < 1\}$ is	A. Singleton set B. A set with two points C. Empty set D. None of these
2529	Bisectors of angles of a triangle are:	A. Collinear B. Concurrent C. Perpendicular D. zero
2530	Question Image	
2531	A box contains 10 red 30 white and 20 black marbles When a marble is drawn at random the probability that it is either red or white is	A. $\frac{1}{6}$ B. $\frac{1}{3}$ C. $\frac{1}{2}$ D. $\frac{2}{3}$
2532	The equation of the circle with centre at (5, -2) and radius 4 is	
2533	The additive inverse of a matrix A is	D. None of these
2534	Question Image	A. 2×2 B. 2×3 C. 3×2 D. 3×3
2535	For $f(x) = x^2$, what is the value of $f(a) + f(-a)$ in terms of a?	A. $3a^2$ B. $2a^2$ C. $2a$ D. $-7a$

2536	Question Image	
2537	Question Image	
2538	A line segment whose end points lie on a circle is called	A. The secant of the circle B. The arc of the circle C. The chord of the circle D. The circumference of the circle
2539	$22.5^\circ =$ _____	
2540	$\sqrt{x} =$ _____ if x is a prime number	A. Rational no B. Natural no C. Irrational no D. Complex no
2541	The value of $7\pi/9$ in terms of degree is	A. 140° B. 130° C. 120° D. 45°
2542	Question Image	D. none of these
2543	Range of $\sin x$ is _____	A. $[-1, 1]$ B. $\mathbb{R}$ C. Negative real numbers D. None of these
2544	Another name of quadratic equation is	A. Polynomial B. 2nd degree polynomial C. Linear equation D. simultaneous equations
2545	For the parabola the line through focus and perpendicular to the directrix is called	A. Tangent B. Vertex C. Axis D. None
2546	The set of rational number is represented by	A. $\mathbb{W}$ B. $\mathbb{R}$ C. $\mathbb{Q}'$ D. $\mathbb{Q}$
2547	The period of $ \sin 2x $ is	A. $\pi/2$ B. $-\pi/2$ C. π D. $\pi/3$
2548	If the equation $x^2+2x-3=0$ and $x^2+3x-k=0$ have a common root then the non - zero value of k is	A. 1 B. 3 C. 2 D. 4
2549	$\sin 90^\circ =$ _____	A. -1 B. 0 C. 1 D. Undefined
2550	An $n \times n$ matrix of the form $[a_{11}, a_{12}, \dots, a_{in}]$ is said to be a	A. null matrix B. Scalar matrix C. Equal matrix D. Row matrix
2551	$\tan^{-1}(1/4) + \tan^{-1}(2/9)$ is equal to	A. $\frac{1}{2} \cos^{-1}(3/5)$ B. $\frac{1}{2} \sin^{-1}(3/5)$ C. $\frac{1}{2} \tan^{-1}(3/5)$ D. $\tan^{-1}(1/2)$
2552	In a school, there are 150 students. Out of these 80 students enrolled for mathematics class, 50 enrolled for English class, and 60 enrolled for Physics class. The students enrolled for English cannot any other class, but the students of mathematics and Physics can take two courses at a time. Find the number of students who have taken both physics and mathematics	A. 40 B. 30 C. 50 D. 20
2553	Question Image	
2554	The principal value of $\sin^{-1}(\sqrt{3}/2)$ is	A. $-\pi/3$ B. $\pi/3$ C. $2\pi/3$ D. $\pi/2$
2555	The graph of a constant line is	A. Vertical line B. Parabola C. Circle

		C. Circle D. Horizontal line
2556	Question Image	A. A complex number B. A rational number C. A natural number D. An irrational number
2557	10 is a even number or 0 is a natural number, then truth value of this disjunction is	A. False B. True C. Not discussed D. negation of first
2558	Period of $\cos 2x$ is _____	
2559	A man of height 6 ft observes the top of a tower and the foot of the tower at angles of 45° and 30° of elevation and depression respectively. The height of the tower is	
2560	Question Image	A. 1 B. 2 C. 0 D. None of these
2561	For all points (x,y) in second quadrant	A. $x > 0, y < 0$ B. $x > 0, y > 0$ C. $x < 0, y < 0$ D. $x < 0, y > 0$
2562	An improper rational fraction can be reduced by division to a	A. Proper fraction B. Polynomial C. mixed form
2563	Question Image	
2564	An open sentence formed by using the sign of equality "=" is called	A. Equation B. In equation C. True sentence D. False sentence
2565	Question Image	
2566	An even function is symmetric about the line	A. $y = x$ B. $x = 0$ C. $y = -x$ D. $y = 0$
2567	What is the number of elements of the power set of $\{0, 1\}$	A. 1 B. 2 C. 3 D. 4
2568	Question Image	
2569	$2x + 3 < 0$ is.	A. Inequality B. Equality C. Identity D. None
2570	Question Image	A. (-1, 2) B. (-1, 1) C. (1, 2) D. $\{-1\}$
2571	The set of points $\{(x,y) y = f(x), \forall x \in \}$ is called	A. Relation B. Graph of f C. Function D. All are correct
2572	Question Image	
2573	Question Image	
2574	Question Image	
2575	The greatest integer which divides the number $101^{100} - 1$ is	A. 100 B. 1000 C. 10000 D. 100000
2576	_____ invented a symbolic way to write the statement "y is a function of x" as $y = f(x)$	A. Leibniz B. Newton C. Euler D. None of these
2577	Projection of vector u along v is	A. $ v \cos \theta$ B. $ u \cos \theta$

2577	Projection of vector u along v is	C. $ v \sin \theta$ D. $ u \sin \theta$
2578	Binomial expansion of an expression A gives $1 - 8x + 24x^2 - 32x^3 - 16x^4$ the expansion A is given by	A. $(1-2x)^4$ B. $(1+2x)^4$ C. $(1-4x)^4$ D. $(1+4x)^4$
2579	The first three terms in the expansion of $(1+x)^{-1}$ are	A. $1 + x + x^2$ B. $1 - x - x^2$ C. $-1 - x + x^2$ D. $1 - x + x^2$
2580	$i^{101} =$	A. i B. i^2 C. $-i$ D. -1
2581		A. $1/2$ B. $1/3$ C. $1/4$ D. None of these
2582	If a, b, c are unit vectors then $ a + b ^2 + a - b ^2$	A. 4 B. $8ab$ C. $9\cos$ D. $4(a, b)$
2583	$\forall z \in \mathbb{C}$, multiplicative is	A. $(1, 1)$ B. $(1, 0)$ C. $(0, 1)$ D. None of these
2584	If $ a = b = a+b = 1$, then $ a-b $ is equal to:	A. 1 B. $\sqrt{3}$ C. $\sqrt{2}$ D. 7
2585	Domain of $\operatorname{cosec} \theta$ is	
2586	The smallest positive root of the equation $\tan x - x = 0$ lies on	
2587		A. 0 B. -1 C. 1 D. $1/2$
2588		
2589	The eccentricity of the parabola $y^2 = -8x$ is	A. -2 B. 2 C. -1 D. 1
2590		A. 9 B. -9 C. 0 D. 1
2591	The vertex of the equation $y^2 = 4ax$ is:	A. $(2, -2)$ B. $(1, 1)$ C. $(0, 0)$ D. $(2, 2)$
2592	$\forall x, y \in \mathbb{R}$, either $x = y$ or $x > y$ or $x < y$ is	A. Transitive property B. Reflexive property C. Trichotomy property D. None of these
2593		D. none of these
2594	A relation A into B in which Domain is not equal to A, is called	A. into function B. onto function C. None of these D. surjective
2595		A. 2 B. 6
2596	A conjunction of two statement p and q is true only if	A. p is true B. q is true C. Both p and q are true D. both p and q are false
2597	Union of the sets of rational and irrational numbers is called 6th set of	A. Natural numbers B. Real numbers C. Whole numbers

		D. Prime numbers
2598	The sample space for tossing a coin twice is	A. {H, T} B. {HH, HT, TH, TT} C. {H, T, HH} D. {HH, HT, TT}
2599	If $\sin\theta = 12/13$, and $\sin\theta > 0$, then $\tan\theta =$	A. $2/5$ B. $12/13$ C. $13/5$ D. $12/5$
2600	Question Image	A. 0 B. 1 D. undefined
2601	If $f(x) = x^2 - x$ then $f(1)$ is	A. 0 B. 1 C. 2 D. 3
2602	Question Image	
2603	$x = 1$ is in the solution of the inequality	A. $x + 1 \geq 0$ B. $x - 2 \geq 0$ C. $3x - 1 \leq 0$ D. $x + 2 \leq 0$
2604	A monoid $(G, *)$ is said to be group if	A. have identity element B. is commutative C. have inverse of each element D. None of these
2605	If the matrices A and B have the order 1×10 and 10×1 then order of AB is	A. 1×1 B. 1×10 C. 10×10 D. 10×1
2606	Intersection of two parabolas	A. parabola B. Two points C. Four points D. Hyperbola
2607	$\{1, 2, 3, 4, \dots\}$ is set of _____	A. Natural numbers B. Whole numbers C. Integers D. Rational numbers
2608	$(ABC)' =$	A. CBA' B. CBA C. $C' B' A'$ D. None of these
2609	Question Image	
2610	The two parts into which 57 should be divided so that their product is 782 are	A. 43, 14 B. 34, 23 C. 33, 24 D. 44, 13
2611	What is the conjugate of $-7 - 2i$?	A. $-7 + 2i$ B. $7 + 2i$ C. $7 - 2i$ D. $\sqrt{53}$
2612	$x^2 + x - 6 = 0$ is	A. An equation B. An identity C. A polynomial D. None of these
2613	The differential equation representing the family of curves $y = A \cos(x + B)$, where A, B are parameters, is	
2614	Question Image	
2615	Question Image	
2616	Question Image	
2617	In an A.P, $a + (n-a)d$ is	A. 1st term B. General term C. Last term D. None of these
2618	$\sin^{-1}(-x) =$	A. x B. $-x$

2618	Question Image	C. $-\sin^{-1} x$ D. $\cos^{-1} x$
2619	The statement that a group can have more than one identity elements is	A. True B. False C. Fallacious D. Some times true
2620	Question Image	A. 3×1 B. 1×3 C. 3×3 D. 1×1
2621	Question Image	A. 3 B. 1 C. 4
2622	$\forall x, y \in \mathbb{R}$ and $x < 0, y < 0$, which one is true	A. $xy < 0$ B. $xy = 0$ C. $xy > 0$ D. None of these
2623	Let A and B be two sets. If every element of A is also an element of B then	
2624	G is geometric mean between a and b if a, G, b is	A. A.P. B. G.P. C. H.P. D. None of these
2625	Question Image	A. 0 B. 1 C. -1 D. 2
2626	$\tan(2\pi + \theta) = \underline{\hspace{2cm}}$;	A. $\tan \theta$ B. $-\tan \theta$ C. $\cot \theta$ D. $-\cot \theta$
2627	Question Image	
2628	Question Image	
2629	If $4 - x > 5$, then	A. $x > 1$ B. $x > -1$ C. $x < 1$ D. $x < -1$
2630	If the sum of co-efficient in the expansion of $(a+b)^n$ is 4096, then the greatest co-efficient in the expansion is	A. 1594 B. 792 C. 924 D. 2924
2631	$ab > 0$ and $a > 0$ then	A. $a > b$ B. $a < b$ C. $a = b$ D. None
2632	Let A is a 3×3 matrix and B is its adjoint matrix. If $ B = 64$, then $ A =$	
2633	For each even natural number n (n^2-1) is divisible by	A. 6 B. 3 C. 4 D. 8
2634	$(a-1)^{-1} =$	A. a^{-1} B. a C. $-a$ D. None of above
2635	The number of 5-digit number that can be formed from the digits 1,2,4,6,8, when 2 and 8 are never together is	A. 72 B. 48 C. 144 D. 20
2636	Question Image	
2637	The function whose range consists of just one element is called	A. One-One Function B. Identity Function C. Onto Function D. Constant Function
2638	Question Image	A. 0 B. 1 C. 2 D. $1/2$

2639	A conditional is regarded as false only when the antecedent is true and consequent is	A. True B. False C. Known D. Unknown
2640	The mid point of the line segment joining the points (3,-1) and (-3,1) is	A. (3,-1) B. (0,0) C. (2,2) D. (4,4)
2641	Question Image	
2642	If 6th term of a series in A.P. is -2 and 8th term is -8, the first term of the serie is	A. 13 B. -13 C. 18 D. -10
2643	If $C = \{p/p < 18, p \text{ is a prime number}\}$, then $C =$	A. {2,3,4,.....17} B. {2,4,6,8.....16} C. {1,3,5,7,9,11,13,15,17} D. {3,6,9,12,15}
2644	Period of $\sin 3x$ is _____	
2645	If $f(x) = x + 1$ then $f(z^2 - 1)$ is	A. $z^{\sup>2\sup>}$ B. $z^{\sup>2\sup>} + 2$ C. $z^{\sup>2\sup>} - 2$ D. none of these
2646	$\forall a, b, c \in \mathbb{R}, a > b \wedge b > c \Rightarrow a > c$ is	A. Trichotomy property B. Transitive property C. Symmetric property D. Additive property
2647	Question Image	A. 15 B. 15 i C. -15 i D. -15
2648	$\sin 270^\circ =$ _____	A. -1 B. 0 C. 1 D. Undefined
2649	The coordinates of the point that divides the join of A(-6,3) and B(5, -2) in the ratio 2:3 internally	
2650	Question Image	A. A parabola B. An ellipse C. A hyperbola D. A circle
2651	An integral of $1/x \, dx$ is:	A. $1/x^{\sup>2\sup>}$ B. $1/-x^{\sup>2\sup>}$ C. $1/\ln x$ D. $\ln x$
2652	Question Image	A. $l^{\sup>2\sup>} + m^{\sup>2\sup>} + n^{\sup>2\sup>} = 0$ B. $l^{\sup>2\sup>} - m^{\sup>2\sup>} + n^{\sup>2\sup>} = 1$ C. $l^{\sup>2\sup>} + m^{\sup>2\sup>} + n^{\sup>2\sup>} = 1$ D. $l^{\sup>2\sup>} + m^{\sup>2\sup>} - n^{\sup>2\sup>} = 0$
2653	$\sqrt{-1} \, b =$	A. b B. 2 C. 2b D. None of these
2654	If $y = x^m$ then dy/dx equals:	A. mx B. x/m C. $mx^{\sup>m-1\sup>}$ D. $xm^{\sup>m-1\sup>}$
2655	The line $y = 2x + c$ is a tangent to the parabola $y^2 = 16x$ if c equals	A. -2 B. -1 C. 0 D. 2
2656	The set of complex numbers forms a group under the binary operation of	A. Addition B. Multiplication C. Division D. Subtraction
2657	0 is _____	A. A positive integer B. A negative integer C. A natural number D. An integer

2658	The condition for polynomial equation $ax^2 + bx + c = 0$ to be quadratic is	
2659		
2660		A. I quadrant B. II quadrant C. III quadrant D. IV quadrant
2661		A. 0 B. -1 C. 1 D. 2
2662	The sum of infinite numbers of terms of an arithmetic series is	A. Finite B. Infinite C. May or may not finite D. None of these
2663		A. 0 B. 1 C. $\frac{1}{2}$
2664	If c is a constant, then $\frac{d}{dx}(c) =$	A. 0 B. c C. cx D. 1
2665	The number of x-intercepts of $y = \sin x$ in his period	A. 0 B. 1 C. 2 D. 3
2666	The 5th term of $(3a-2b)^{-1}$ is	A. $\frac{7b^2}{a^5}$ B. $\frac{16b^2}{243a^5}$ C. $\frac{17b^4}{43a^5}$ D. $\frac{25b^3}{43a^5}$
2667	$\cos(3\pi/2 + \theta) =$ _____;	A. $\sin\theta$ B. $\cos\theta$ C. $-\sin\theta$ D. $-\cos\theta$
2668	The triangle that does not have a right angle is called.	A. Isosceles triangle B. right angle triangle C. equivalent triangle D. oblique triangle
2669		A. 0 B. 8 C. 5 D. 9
2670		A. 1 B. 0 C. 5 D. 2
2671	If α, β are the roots of the equation $x^2 - 8x + p = 0$ and $\alpha^2 + \beta^2 = 40$, then value of p is	A. 8 B. 12 C. 10 D. 14
2672	The vector $i = [1, 0]$ is called unit vector along:	A. x-axis B. y - axis C. z- axis D. Both a and y-axis
2673	The first three terms in the expansion of $(1 - x)^{-2}$ are	A. $1 - 2x + 3x^2$ B. $1 - 2x - 3x^2$ C. $1 + 2x + 3x^2$ D. $-2 - 2x + 3x^2$
2674	If c is a constant number and if f is the function defined by the equation $f(x) = c$ for all values of x, then f is differentiable at every x and f is defined by the equation f(x)	A. f B. 1 C. C D. 0
2675	Shifting origin to $(-4, -6)$, the new coordinates of $(-6, -8)$ are:	A. $(-1, 2)$ B. $(-2, -2)$ C. $(1, -2)$ D. $(3, -2)$
2676	$2x^3 + 3x + 9$ is a _____	A. Polynomial of degree 3 B. Quadratic equation C. Cubic equation D. Polynomial of degree 2

2677	Question Image	
2678	Three consecutive terms of a progression are 30, 24, 20. The next terms of the progression is	
2679	Cofactor of an element a_{ij} denoted by A_{ij} is	A. $(-1)^{i+j}$ B. M_{ij} C. $(-1)^{i+j} M_{ij}$ D. None of above
2680	Parametric equation of circle : $x^2+y^2=r^2$, are	A. $r = x \cos \theta$ $r = y \sin \theta$ B. $x = r \cos \theta$ $y = r \sin \theta$ C. $x = r \sin \theta$ $y = r \sin \theta$ D. $x = r \cos \theta$ $y = r \sin \theta$
2681	Number of conics is	A. 1 B. 3 C. 2 D. 4
2682	If either $A = 0$ or $B = 0$, then $Ax^2 + By^2 + 2Gx + 2Fy + c = 0$ represents a	A. Circle B. Hyperbola C. Ellipse D. Parabola
2683	If $3x^4 + 4x^3 + x - 5$ is divided by $x + 1$, then the remainder is	A. 0 B. 7 C. -7 D. 5
2684	The identity function is	A. surjective B. injective C. bijective D. into
2685	Question Image	A. 30° B. 45° C. 60° D. 75°
2686	There are 25 tickets bearing number from 1 to 25. One ticket is drawn at random. The probability that the number on it is a multiple of 5 or 6 is	A. $7/25$ B. $9/25$ C. $11/25$ D. None of these
2687	Question Image	A. Linear equation B. Quadratic equation C. Cubic equation D. None of these
2688	All letters of the word "AGAIN" are permuted in all possible ways and the words so formed (with or without meaning) are written as in dictionary, then the 50th word is	A. NAAGI B. NAAIG C. IAANG D. INAGA
2689	If $A \subseteq B$ then $A \cup B$ is	A. A B. B C. A' D. $A \cap B$
2690	Question Image	
2691	The value of i^{4n+1}	A. 1 B. -1 C. i D. i^2
2692	Question Image	
2693	Which of the following represents a vector	D. (x, y)
2694	Question Image	
2695	If $x + y + 1 = 0$ touches the parabola $y^2 = \lambda x$, then λ is equal to	A. 2 B. 4 C. 6 D. 8
2696	A second degree equation in which coefficients of x^2 and y^2 are equal and there is no product term xy represents:	A. a parabola B. a circle C. an ellipse D. a pair of lines
2697	The lines that form the cone are called its:	A. Generation B. Circular cone C. nappes D. conics

2698	The general solution of $\tan 3x = 1$ is	
2699	The remove the term involving xy , from $7x^2 - 6\sqrt{3}xy + 13y^2 - 16 = 0$ the angel of rotation is	A. $\theta = 30^\circ$ B. $\theta = 45^\circ$ C. $\theta = 60^\circ$ D. $\theta = 75^\circ$
2700	20. 19. 18. 17= _____	
2701	The set $\{1, 2, 3, 4, \dots\}$ is called	A. Set of Natural numbers B. Set of whole numbers C. Set of rational number D. Set of irrational numbers
2702	The set $\{-1, 1\}$ is	A. Group under the multiplication B. Group under addition C. Does not form a group D. Contains no identity element
2703	The exterior angle of the interior angle C of he quadrilateral whose vertices are A(5,2),B(-2,3),C(-3,-4),D(4,-5) is	A. 30° B. 60° C. 45° D. 90°
2704	$\sin h x =$ _____	
2705	It is not possible to find the exact value of	A. π B. $\sqrt{9}$ C. $\sqrt[3]{27}$ D. $\sqrt{1}$
2706	Question Image	
2707	Which is the proper rational function	
2708	The distance of the point (2,3) from origin is	B. 5 C. 2 D. 3
2709	A line joining two distinct points on a parabola is called	A. Axis B. Directrix C. Chord D. Tangent
2710	If $S = \{3, 6, 9, 12, \dots\}$, then	A. S = Four multiples of 3 B. S = Set of even numbers C. S = Set of prime numbers D. S = All multiples of 3
2711	$\cot 45^\circ =$ _____	
2712	The solution set of the equation $ 3x + 2 = 5$ is	
2713	A daclarative statement which may be true or false but not both is called a	A. hypothesis B. proposition C. implication D. conjunction
2714	Two circles are said to be concentric if they have	A. same radius B. same chord C. same centre D. same diameter
2715	The angle of elevation of the tops of two towers at the middle point of the line joining the foots of the tower are 60° and 30° respectively. The the ratio of the heghts of the tower is	A. 2 : 1 B. 3 : 1 C. 1 : 2 D. 1 : 3
2716	A matrix whose determinant is zero is said to be	A. Inverse B. adjoint C. singular D. None-singular
2717	For any equilateral $r : R : r_1 : r_2 : r_3 =$	A. 1:2:3:4:5 B. 1:2:3:3:3 C. 1:2:4:4:4 D. 2:1 :2 :2 :2
2718	If a set S contains n elements then P (S) has number of elements	A. $2^{ⁿ}$ B. $2^{ⁿ²}$ C. 2.n D. $n^{²}$
2719	$x = \sin^{-1} 3$, then the value of $\sin x$ is	A. $\sqrt{3/2}$ B. 3 C. Not possible D. -1

2720	The projections of a line segment on x, y, z axes are 12, 4, 3. The length and the direction cosines of the line segment are	
2721		D. none of these
2722	the value of $25\pi/36$ in degrees is	A. 120° B. 125° C. 60° D. 115°
2723	Which of the following is a vector.	A. work B. time C. density D. electric field
2724	99th term of the series $2 + 7 + 14 + 23 + 34 + \dots$ is	A. 9998 B. 9999 C. 10000 D. None of these
2725	$\sin 3a = \underline{\hspace{2cm}}$;	A. $3\sin a - 4\sin 3a$ B. $4\sin a - 3\sin 3a$ C. $3\cos 3a - \cos a$ D. $4\cos 3a - 3\cos a$
2726	The identity element of a set X with respect to intersection in $P(X)$ is	A. X B. Does not exist C. $\emptyset$ D. None of these
2727		
2728	$i^2 =$	A. 1 B. 2 C. -1 D. 0
2729		A. $3x^2 + 2$ B. $3x^2 + 2x + 3$ C. $x^3 + x^2$ D. none of these
2730	We often consult doctors or lawyers on the basis of their good	A. personality B. behaviour C. reputation D. good dealing
2731		A. $a \sin(ax + b) + c$ B. $-a \sin(ax + b) + c$
2732	Range of $\tan x$ is _____	A. $[-1, -]$ B. $\mathbb{R}$ C. Negative real numbers D. $\mathbb{R} - \{x \mid -1 \leq x \leq 1\}$
2733	$\tan(\alpha - \beta) =$	
2734	The graph of the linear equation of the form $ax + by = c$ is a line which divided the plane into:	A. Two similar regions B. Two disjoint regions C. Four equal parts D. One region
2735	$3x + 4 \leq 0$ is	A. not inequality B. equation C. identity D. inequality
2736	The point _____ is in the solution of the inequality $2x - 3y > 5$	A. (1, -1) B. (2, 2) C. (0, 0) D. (3, 0)
2737	The are of sector of a circular region of radius r is	A. $2\pi r$ B. πr^2 C. $\frac{1}{2}\pi r^2$ D. $\frac{1}{2} r^2$
2738	$i^{101} =$	A. i B. i^2 C. -i D. -1
2739		A. similar images B. distinct images C. similar range

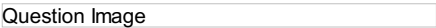
		D. option a and c
2740	For any set X, $X \cup X$ is	A. X B. X^c C. Φ D. Universal Set
2741	Question Image	A. xy B. y C. 0 D. x
2742	The quadrilateral with the vertices (-3,-2), (2,-1), (3,4) and (-2,3) is a:	A. Square B. Rectangle C. rhombus D. parallelogram
2743	If the function $y=2x-3$, what is the preimage of 11?	A. 11 B. 7 C. 5 D. 2
2744	14 is not a	A. Prime number B. Whole number C. Even number D. Real number
2745	1 radian = _____	A. 180° B. 90° C. 57.296° D. 60°
2746	Zero is	A. An irrational number B. A rational number C. A negative integer D. A positive number
2747	Question Image	A. 8 B. $1/56$ C. 56 D. None of these
2748	Question Image	B. 1 C. 2 D. -2
2749	Question Image	A. $a-b=ab$ B. $ab=a$ C. $a+b=ab$
2750	If the 4th term in the expansion of $(px + x^{-1})^m$ is 2.5 for all $x \in R$, then	
2751	$f(x) = 3x^4 - 2x^2 + 7$ is:	A. an even function B. an odd function C. an even and implicit function D. neither even nor a odd
2752	A _____ divides the plane into left and right half planes.	A. Vertical line B. Horizontal line C. Non vertical line D. Inequality
2753	Question Image	A. 0 B. 1 C. -1 D. None of these
2754	What is the period of $5 \cot x$?	A. π B. $-\pi$ C. $\pi/2$ D. 2π
2755	$\int x \cos x \, dx$ is equal to :	A. $x \cos x + \sin x$ B. $\cos x + x \sin x$ C. $x \cos x + x \sin x$ D. $x \sin x + \cos x$
2756	Question Image	
2757	In common logarithm the base is	A. 1 B. 0 C. 10 D. e
2758	$f(x) = 3x/x^2 + 1$ is:	A. an even function B. an odd function C. an even and implicit function

		C. an even and implicit function D. neither even nor a odd
2759	The function $f\{(x, y) \mid y = ax^2 + bx + c\}$ is	A. One-one function B. Constant function C. Onto function D. Quadratic function
2760	If $ ai + (\alpha+1)j + 2k = 3$ then value of α is	A. 1,2 B. -1,-2 C. 1,-2 D. -1,2
2761	Domain of $\cosh x$ is	A. $\mathbb{R}$ B. $\mathbb{R} - \{0\}$ C. $[1, \infty)$ D. $[0, \infty)$
2762	$3x + 4 < 0$ is	A. inequality B. equation C. identity D. not inequality
2763	Two sets A and B are said to be disjoint if	
2764		D. none of these
2765	The angle between the vectors $\underline{u} = [-3, 5]$ and $\underline{v} = [6, -2]$ is:	A. $\pi/2$ B. $-3\pi/2$ C. π D. None of these
2766	The distance between lines $3x + 4y = 9$ and $6x + 8y = 15$ is:	A. $2/3$ B. $3/10$ C. 8 D. $6/5$
2767		A. -1 B. 0 C. 1 D. None of these
2768	The coefficient of the second term of $(a+b)^4$ is	A. 1 B. 9 C. 3 D. 5
2769	If no two elements of ordered pairs of a function from A onto are the same, then it is called.	A. Surjective B. Injunctive C. Bijective D. on to
2770		
2771	$(a,b) + (-a,-b) =$	A. (0,0) B. (a,b) C. (-a,-b) D. (1,1)
2772	Six boys and 3 girls are to be seated at random, in a row, for a photograph. The probability that no two girls will sit together is	A. $1/12$ B. $1/6$ C. $5/12$ D. $7/12$
2773	1 is not	A. Real number B. Natural number C. Prime Number D. Whole Number
2774	if $f(x) = x^3 - 3x^2 + 5x - 1$, then $f(-\sqrt{2}) =$	A. $7+7\sqrt{2}$ B. $3+3\sqrt{2}$ C. $-7-7\sqrt{2}$ D. $-3-3\sqrt{2}$
2775	$\underline{O}(0,0)$ is called:	A. Position vector B. Free vector C. Unite vector D. Null vector
2776	The value of $\sin 28^\circ \cos 17^\circ + \cos 28^\circ \sin 17^\circ$ is	
2777	The value of $\sin [\arccos (-1/2)]$ is	
2778	How many different 5-digit even numbers are possible form digit 1,2,4,6,8	A. $4 : 4!$ B. $4!$ C. $5!$ D. $4!+4!$

2779	Domain of $\cot^{-1}x$ is _____	
2780	If a set S contains "n" elements then P (S) has number of elements	A. 2^n B. 2^{2n} C. $2 \cdot n$ D. n^2
2781	Domain of cosec x is _____	
2782	The symbol of irrational is	A. W B. N C. Q D. Q'
2783	How many numbers are there between 103 and 750 which are divisible by 6	A. 125 B. 107 C. 108 D. 113
2784	The equation $ x + 4 = x$ has solution	A. $x = -2$ B. $x = 2$ C. $x = -4$ D. $x = 4$
2785		
2786	A conjunction is considered to be true only if both its components are	A. False B. Equivalent C. Equal D. True
2787	The third term of a G.P. is the square of first term. If the second term is 8, then the 6th term is	A. 120 B. 124 C. 128 D. 132
2788		D. none of these
2789	An A.P. consists of n(odd terms) and its middle term is m. then the sum of the A.P. is	A. 2 mn B. $\frac{1}{2} mn$ C. mn D. mn^2
2790	p, q, r and s are integers. If the A.M. of the roots of $x^2 - px + q = 0$ and G.M. of the roots of $x^2 - rx + s = 0$ are equal, then	A. q is an odd integer B. r is an even integer C. p is an even integer D. s is an odd integer
2791	$\tan 270^\circ =$ _____;	A. 0 B. 1 C. -1 D. Undefined
2792		
2793		
2794		A. 71 B. -22 C. 27 D. 28
2795		
2796	If A is any matrix then its additive inverse is	A. A B. A^{-1} C. A^t D. -A
2797		
2798		A. c = 0 B. c = -1 C. c = -2 D. c = 1
2799	In a triangle ABC, if angle A = 72° , angle B = 48° and c = 9 cm then C is	A. 69° B. 66° C. 60° D. 63°
2800	An open sentences formed by using the sign of equality '=' is called _____	A. An identity B. An equation C. A polynomial D. None of these

2801	Question Image	A. are real no B. both are not real C. are imaginary no D. both are imaginary
2802	Question Image	
2803	$H_1, H_2, H_3, \dots, H_n$ are called n harmonic means between a and b if $a, H_1, H_2, H_3, \dots, H_n, b$ are in	A. H.P. B. G.P. C. A.P. D. None of these
2804	If $f(x) = x^3 - 2x^2 + 4x - 1$ then $f(2)$ is	A. 7 B. -16 C. 16 D. -9
2805	If the roots of $ax^2 + b = 0$ are real and distinct then	A. $ab \geq 0$ B. $a = 0$ C. $ab \leq 0$ D. $a \geq 0, b \geq 0$
2806	Question Image	A. $x^3 - x^2 + x + c$ B. $6x - 2 + c$ C. $x^3 - 2x + c$
2807	If a plane passes through the vertex of a cone then the intersection is	A. an ellipse B. a hyperbola C. a point circle D. a parabola
2808	Name the property used in $4 \times (5 \times 8) = (4 \times 5) \times 8$	A. Associative property of addition B. Associative property of multiplication C. Additive identity D. Multiplicative identity
2809	Which of the following statement, is ture	A. Lahore is in Punjab and $5 \geq 7$ B. Lahore is the capital of Pakistan and $3 \leq 23$ C. Lahore is capital of Sindh and $2+2=7$ D. Lahore is the capital of Sindh or $2+2 = 4$
2810	Question Image	A. $a = a$ B. $a \leq a$ C. $a \geq a$ D. $a^2 \geq a$
2811	The number of proper subset of $A = \{a, b, c, d\}$ is	A. 3 B. 6 C. 8 D. 15
2812	if $a_1 = 3, d = 7$ and $a_n = 59$, then the number of terms in A.P is	A. 7 B. 9 C. 11 D. 13
2813	If e, e' be the eccentricities of two conics $S=0$ and $S'=0$ and if $e^2 + e'^2 = 3$ then both S and S' can be	A. Hyperbola B. Parabolas C. Ellipses D. None of these
2814	Question Image	D. all
2815	The magnitude of a vector can never be	A. Zero B. Negative C. Positive D. None of these
2816	The domain of $y = \cos^{-1} x$ is	A. $-\infty \leq x \leq \infty$ B. $-1 \leq x \leq 1$ C. $x \leq -1$ or $x \geq 1$ D. None of these
2817	If n is any positive integer then $n! > 2^{n-1}$ for	
2818	The st. lines whose direction cosines satisfy $al + bm + cn = 0, fm + gn + hl = 0$ are perpendicular if	
2819	Order (or sense) of an inequality is changed by multiplying or dividing its each side by a:	A. Zero B. one C. negative constant D. Non negative constant
2820	Question Image	A. 0 B. 1
2821	Question Image	

2822	A matrix in which the number of rows is equal to the number of columns is called a	A. Diagonal matrix B. Rectangular matrix C. Square matrix D. Scalar matrix
2823	A chord passing through the centre of the circle is called	A. the secant of the circle B. the tangent of the circle C. the arc of the circle D. the diameter of the circle
2824	How many arrangements of the letters of the word PAKISTAN can be made	
2825	Domain of $3 \sin x$ is _____	A. $[-3, 3]$ B. $\mathbb{R}$ C. Positive real numbers D. None of these
2826	Question Image	
2827	The sum if 1,3,5,7,9..... up to 20 terms is	A. 400 B. 472 C. 563 D. 264
2828	Question Image	A. Every element of A is in B B. Every element of B is in A C. Every element of A is in B' D. Every element of A is in A
2829	Question Image	A. $\cos 2x$ B. $2 \cos 2x$ C. $2 \sin 2x$ D. $-2 \cos 2x$
2830	The area of the circle centred at (1, 2) and passing through (4, 6) is	
2831	If (2, 3) is the mid point of (a, 3) and (5, b) then	A. $a = 1, b = -3$ B. $a = -1, b = 3$ C. $a = 1, b = 3$ D. $a = -1, b = -3$
2832	Sum of n terms of a geometric series if $ r < 1$ is	
2833	Question Image	A. $2x + 2y$ B. $4 - x^{\sup} 2^{\sup}$ C. $-x/y$ D. x/y
2834	Question Image	
2835	Question Image	
2836	The zero vector is regarded to be parallel to	A. Every vector B. Is some cases C. Both a,b D. None
2837	A second degree equation in which coefficients of x^2 and y^2 are equal and there is no product term xy represents	A. a parabola B. a circle C. an ellipse D. a pair of lines
2838	Question Image	A. Polynomial of degree 0 B. Polynomial of degree 2 C. Quadratic equation D. None of these
2839	Question Image	
2840	Question Image	A. 0 B. 1 C. -A D. -1
2841	Question Image	A. Rule of quotient of fraction B. Golden rule of fraction C. Rule for product of fraction D. Principle for equality of fraction
2842	If the focus is F (0, -a) and directrix is the line $v=a$, then equation of the parabola is:	A. $x^{\sup} 2^{\sup} = 4ay$ B. $y^{\sup} 2^{\sup} = 4ax$ C. $y^{\sup} 2^{\sup} = -4ax$ D. $x^{\sup} 2^{\sup} = 4ax$

2843	If $x^2 + y^2 = 1$, then dy/dx	A. y/x B. $-x/y$ C. $1/x$ D. None of these
2844	$f(x) = ax^2 - 3x - 5$, and $f^{-1}(2) = 9$, a is equal to	A. 2 B. 3 C. -2 D. 4
2845	Domain of $\sec \theta$ is	
2846	If $A = [a_{ij}]$ is $(m \times n)$ matrix then transpose of A is of the order	A. $m \times m$ B. $m \times n$ C. $n \times n$ D. $n \times m$
2847	$1 + 2 + 3 + \dots + n =$ _____	
2848	The minimum value of the quadratic function $f(x) = x^2 + 6x - 2$, is	A. 11 B. 6 C. -11 D. 13
2849	How many arrangements of the letters of the word MATHEMATICS can be made	
2850	There is no integer n for which 3n is	A. Even B. Prime C. Odd D. Real
2851		
2852		
2853		
2854	The middle term in the expansion of $(a + x)^{12}$ is	A. 7th B. 8th C. 9th D. 6th
2855	The physical quantity which possesses both magnitude and direction is called a	A. scalar B. vector C. constant D. none of these
2856	$\cos^{-1}(\cos x) =$	A. x B. $\cos x$ C. $x = 1/x$ D. $\cos^{-2} x$
2857		A. $a^{1/2} + a^{2/2}$ B. $a^{2/2} \times a^{1/2} + a^{2/2} \times a^{2/2}$
2858	The points (5, 2, 4), (6, -1, 2) and (8, -7, k) are collinear if k is equal to	A. -2 B. 2 C. 3 D. -1
2859	$2^x \cdot 3 + 2^{x+1} + 32 = 0$ gives value of x	A. (3,4) B. (8,4) C. (2,3) D. (5,9)
2860		A. x C. y
2861		
2862	Multiplicative inverse of "1" is	A. 0 B. ± 1 C. 1 D. {0,1}
2863		A. 8 B. $1/8$ C. $1/3$ D. $2/3$
2864		
2865	The general term in the expansion of $(a+x)^n$ is	A. $(r-1)$ th term B. $(r+1)$ th term C. rth term D. none

		D. none
2866	Point (2,0) lies on trigonometric function $f(x)=$ _____;	A. $\sin x$ B. $\cos x$ C. $\tan x$ D. $\sec x$
2867	Question Image	A. No solution B. One real solution C. More than one real solution D. None of these
2868	The points (3,1), (-2,-3) and (2,2) are the vertices of :	A. Equilateral triangle B. Isosceles triangle C. right -angled triangle D. rhombus
2869	Form a group of 5 men and 3 women, a committee of 4 persons is to be selected randomly. The probability that there is a majority of men is	A. $\frac{1}{4}$ B. $\frac{1}{3}$ C. $\frac{1}{2}$ D. $\frac{1}{6}$
2870	Question Image	
2871	If ΔABC is right, law of cosine reduce to	A. Law of sine B. Law of tangent C. Phthogorous theorem D. Hero's formula
2872	If $a + b + c = 0$ then which of the following is true	A. $a = b = c = 0$ B. $a, b, c = c, a$ C. $a \times b = b \times c = c \times a$ D. None
2873	A point of a solution region where two of its boundary lines intersect, is called	A. Boundary B. Inequality C. Half plane D. Vertex
2874	The periods of the function $f(x) = x[x]$ is	A. 1 B. 2 C. Non periodic D. None of these
2875	$A - B =$ _____	
2876	Question Image	A. $y : x$ B. $x : y$ C. $-y : x$ D. $-x : y$
2877	Question Image	A. A onto B B. both a & c C. A into B D. none of these
2878	Number of ways of writing the letters of WORD taken all at a time is	A. 24 B. 4 C. 12 D. 6
2879	Question Image	D. both a & c
2880	An implication of p and q is denoted by	
2881	Question Image	
2882	If $\forall a, b \in R$, then $a + b \in R$ is a property	A. Closure law of addition B. Associative law of addition C. Additive inverse D. Additive identity
2883	If five triangles are constructed having sides of the lengths indicated below, the triangle that will NOT be a right triangle is	A. 8, 15, 17 B. 3, 4, 5 C. 12, 15, 18 D. 5, 12, 13
2884	The set $\{Z \setminus \{0\}\}$ is group w.r.t	A. Addition B. Multiplication C. Division D. Subtraction
2885	Question Image	A. 5 B. 20 C. 9 D. 4
		A. Such that B. This implies that

2886	The symbol $\exists$ stand for	B. This implies that C. For all D. There exist
2887	The inclination of a line parallel to y-axis is	
2888	The distance between the points A(3,1) and B(-2,-4) is	A. 5 C. 25 D. 10
2889	The set of real numbers is a subset of	A. The set of natural numbers B. The set of rational numbers C. The set of integers D. The set of complex numbers
2890	Question Image	
2891	Question Image	A. 0 B. 1 C. -1 D. undefined
2892	Question Image	
2893	The multiplicative inverse of $1 - 2i$ is	
2894	An infinite arithmetic series is always	A. Convergent B. Oscillatory C. Divergent D. None of these
2895	Addition and subtraction of two matrices A+B and A-B requires that the matrices be	A. equal dimension B. rectangular C. square D. identity
2896	Geometric mean between a and b is	
2897	Apollonius was a	A. rocket B. Muslim scientist C. Greek mathematicians D. method of finding conics
2898	What is the conjugate of $-6 - i$	A. $-6 + i$ B. $6 + i$ C. $-6 - i$ D. $6 - i$
2899	The inverse of a line is	A. inverse B. Line C. quadratic D. Circle
2900	Question Image	
2901	Question Image	
2902	Question Image	A. $a \cot(ax + b) + c$ B. $-a \cot(ax + b) + c$
2903	If p and q are two statements then their biconditional 'p if q' is denoted by	
2904	Question Image	
2905	Question Image	
2906	Question Image	
2907	Question Image	
2908	Question Image	A. $A = C$ B. $A = B$ C. $B = C$ D. None of these
2909	If $\#n = (n-5)^2 + 5$, then find $\#3 \times \#4$.	A. 54 B. 12 C. 4 D. 9
2910	Every identity matrix is	A. Row-vector B. Scalar C. Column-vector D. All
2911	Question Image	

2912	If p is false, $\neg p$ is	A. True B. Not true C. Equal to p D. Conjunction
2913	Differentiation of $\sin x$ w.r.t. $\cot x$ is:	A. $-\sin^2 x \sec x$ B. $-\cos x \sin^2 x$ C. $-\cos^2 x \tan x$ D. $-\sin^2 x$
2914	If P, Q, R be the A.M., G.M., H.M. respectively between any two rational numbers a and b, then $P - Q$ is	
2915	If $z_1 = \sqrt{-36}$, $z_2 = \sqrt{-25}$, $z_3 = \sqrt{-16}$ then	A. 15 B. 15i C. -15i D. -15
2916	The area between the x-axis and the curve $y = x^2 + 1$ from $x = 1$ to 2 is:	A. 15/6 B. 15/4 C. 10/4 D. 10/3
2917	In general for matrix multiplication, which property is not possible?	A. Associative B. Commutative C. Left distributive property D. right distributive property
2918	If the exponent in the binomial expansion is 6, then the middle term is	A. 2nd B. 3rd C. 4th D. 5th
2919	The set of the first elements of the ordered pairs forming a relation is called its	A. Relation in B B. Range C. Domain D. Relation In A
2920		
2921		A. Closure law of addition B. Associative law of addition C. Commutative law of multiplication D. Associative law of multiplication
2922	If S_n is a definite number as $n \rightarrow \infty$, then the geometric series is	A. Convergent B. Divergent C. Oscillatory D. None of these
2923	The difference of two consecutive terms of an A.P. is called _____	A. General term B. Common ratio C. Common difference D. None of these
2924		
2925	For any set B, $B \cup B'$ is	A. Is set B B. Set B' C. Universal set
2926	$n(n-1)(n-2) \dots (n-r+1) =$ _____	
2927	x is a member of the set $\{-1, 0, 3, 5\}$ y is a member of the set $\{-2, 1, 2, 4\}$ which is possible?	A. $x - y = -6$ B. $x - y \leq -6$ C. $x - y \geq -6$ D. None
2928	The order of the differential equation of all conics whose axes coincide with the axes of coordinates is	A. 2 B. 3 C. 4 D. 1
2929	If a parabola opens down, then its vertex is at the	A. Right of the parabola B. Left of parabola C. Lowest point on the parabola D. Highest point on the parabola
2930		A. Principle of equality of fractions B. Rule for product of fractions C. Golden rule of fractions D. Rule for quotient of fractions
2931	Two matrices are conformable for addition, if they are	A. equal B. adjoint C. same order D. ...

D. disjoint

2932	Question Image	A. Commutative law of addition B. Associative law of addition C. Additive identity D. Additive inverse
2933	In $\triangle ABC$ the mid points of AB and AC are (3,5) and (-3,-1) respectively, then the length of the side BC is:	A. 15 B. 10 C. 30 D. 20
2934	The points A, B and C are said to be collinear if they:	A. be on same line B. have same slope C. Lie on a same plane D. options a & b
2935	Question Image	A. 0 B. 1 C. -1 D. None of these
2936	$\sin(\alpha + \beta) =$	A. $\sin\alpha\cos\beta - \cos\alpha\sin\beta$ B. $\sin\alpha\cos\beta + \cos\alpha\sin\beta$ C. $\sin\alpha\cos\beta - \sin\alpha\sin\beta$ D. $\sin\alpha\cos\beta + \sin\alpha\sin\beta$
2937	If $a = \{2m/2m < 9, m \in p\}$, the $(n A) =$	A. {2,3,4,5,6,7,8} B. {2,4,6,8.....16} C. { 4, 6} D. {2,3,5,7}
2938	If a 1-1 correspondence can be established b/w two sets A and B, then they are called	A. Equal sets B. Equivalent sets C. Over lapping sets D. None of these
2939	Question Image	
2940	Question Image	A. A variable B. A constant C. 0 D. None of these
2941	$f(x) = ax + b$ will be a constant function if	A. $a = 1, b = 1$ B. $a = 1, b = 0$
2942	Solving the equation $2^{2x} \cdot 3 \times 2^{x+2} + 2^5 = 0$ for $2^{2x} \cdot 3 \times 2^{x+2} + 2^5 = 0$	A. (1,4) B. (8,4) C. (2,3) D. (5,9)
2943	Question Image	D. none of these
2944	Question Image	A. Reciprocal equation B. Exponential equation C. Radical equation D. None of these
2945	Question Image	A. 4 B. 3 C. 2 D. 1

2946	The set $\{1,2,3,4,\dots\}$ is called	A. Set of natural numbers B. Set of whole numbers C. Set of rational number D. Set of irrational numbers
2947	If the exponent in the binomial expansion is 6, then the middle term is	A. 2nd term B. 3rd term C. 4th term D. 5th term
2948	The formula $a_n = a + (n-1)d$ for an A.P is called	A. nth term of an A.P B. Sum of first n terms C. A.M between a and b D. None of the above
2949	The value of $2\pi/3$ in degree is	A. 120° B. 160° C. 150° D. 60°
2950	The multiplicative inverse of 4 is	A. -4 B. $-1/4$ C. $1/4$ D. 1
2951	The multiplicative inverse of x such that $x = 0$ is	A. -x B. does not exist C. $1/x$ D. 0
2952	for $n \in \mathbb{N}$, $3^{2n} + 7$ is divisible by	A. 7 B. 8 C. 9 D. 10
2953	The matrix $A = [a_{ij}]_{m \times n}$ with $m \neq n$ is	A. Rectangular B. Symmetric C. Square D. None
2954	Question Image	
2955	To draw conclusions front premises believed to be true, this way of reasoning is called	A. deduction B. induction C. implication D. disjunction
2956	Question Image	A. 3 B. 1 C. 2 D. 4
2957	Question Image	A. 0 B. 1 C. 2 D. None of these
2958	A set having only one element is called	A. An empty set B. Universal set C. A singleton set D. A power set
2959	Question Image	
2960	If $x = at^2$ and $y = 2at$ then $dy/dx =$	A. $2a/y$ B. $y/2a$ C. $-a/2y$ D. $-2y/a$
2961	Roots of the equation $2x^2 - 7x + 3 = 0$ are	A. Rational B. Irrational C. Complex D. None of these
2962	Question Image	A. 0 B. 1 C. 2 D. 4
2963	Question Image	
2964	How many types of an equation	A. 1 B. 3 C. 2 D. None
	The n numbers $A_1, A_2, A_3, \dots, A_n$ are called an	A. An arithmetic series B. A geometric series C. A harmonic series D. A series

2965	arithmetic means between a and b if a, $A_1, A_2, A_3, \dots, A_n$, b is _____	B. An arithmetic sequence C. A geometric sequence D. A harmonic sequence
2966	For all points (x,y) on y-axis	A. x is positive B. $x = 0$ C. x is negative D. $y = 0$
2967	The term involving x^4 in the expansion $(3-2x)$ is	A. $217x^4$ B. $15120x^4$ C. $313x^4$ D. $-25x^4$
2968	π is _____	A. A complex number B. A rational number C. A natural number D. An irrational number
2969	Out of 40 consecutive natural numbers, two are chosen at random. Probability that the sum of the numbers is odd, is	A. $14/29$ B. $20/39$ C. $1/2$ D. n
2970		A. Singleton set B. A set with two points C. Empty set D. None of these
2971	Which of the following is a factor of $x^3 - 3x^2 + 2x - 6$	A. $x + 2$ B. $x + 3$ C. $x - 3$ D. $x - 4$
2972	If n is any positive integer then $n! > n^2$ for	
2973		A. $1 + \tan^2 x + c$ B. $\tan x + c$ C. $-\tan x + c$ D. $\cot x + c$
2974	How many terms of the A.P 3,6,9,12,15.....must be taken to make the sum 108	A. 8 B. 6 C. 7 D. 36
2975	The period of $\cot 8x$ is	A. $\pi/10$ B. $9\pi/7$ C. $\pi/9$ D. $\pi/8$
2976	A square matrix $A = [a_{ij}]$ is upper triangular when	A. $c_{ij} = 0$ B. $b_{ij} = 0$ C. $a_{ij} = 0$ for all $i > j$ D. $d_{ij} = 0$
2977		
2978	Number of lines passing through three non- collinear points is	A. 2 B. 3 C. 1 D. 0 E. ∞
2979	For any real numbers x,y, $xy=0 \Rightarrow$	A. $x \neq 0 \wedge y \neq 0$ B. $x = 0 \vee y = 0$ C. $x = 0$ D. $y = 0$
2980	$p(x) = 2x^4 - 3x^3 + 2x - 1$ is polynomial of degree	A. 1 B. 2 C. 3 D. 4
2981	If the cutting plane is slightly tilted and cuts only one nappe of the cone, the resulting section is	A. an ellipse B. a circle C. a hyperbola D. a parabola
2982	$(A \cap B) \subset C =$ -----	A. $A \cup B \subset C$ B. $A \cup B$ C. $A \cap B$ D. None of these

A. > ∞
> ∞
> ∞

2983	The range of $y = \cot x =$ _____	B. -><i>∞</i>> x >+><i>∞</i> C. -><i>∞</i> y &lt;+><i>∞</i> D. None of above
2984		A. A B. 0 C. Unit vector D. None
2985	Basic-principles of deductive logic were laid down by:	A. Euelid B. Leibniz C. Aristotle D. Newton
2986		A. c/a B. -c/a C. b/a D. -b/a
2987	The statement that a group can have more than one identity elements is	A. True B. False C. Ambiguous D. Some times true
2988	Name the property used in $100 + 0 = 100$	A. Additive inverse B. Multiplicative inverse C. Additive identity D. Multiplicative identity
2989	The number of subset of $\{0\}$ is	A. 1 B. 2 C. 3 D. None
2990	$\cos 2a =$ _____;	A. $\cos^2 a - \sin^2 a$ B. $2\cos^2 a - 1$ C. $1 - 2\sin^2 a$ D. All of these
2991	The roots of the equation $ax^2 + bx + c = 0$ are real and equal if	A. $b^2 - 4ac < 0$ B. $b^2 - 4ac = 0$ C. $b^2 - 4ac > 0$ D. None of these
2992		
2993	The point _____ is in the solution of the inequality $2x + 3y < 5$	A. (1,1) B. (2,2) C. (0,1) D. (0,2)
2994		A. square root function B. identity function C. linear function D. quadratic function
2995		D. none of these
2996	n different objects can be arranged taken all at a time in _____	A. $(n + 1)!$ ways B. $(n - 1)!$ ways C. $n!$ ways D. n ways
2997		
2998	The middle term of the expansion $(1 + 2x)^6$ is _____	A. 1st term B. 4th term C. 2nd term D. 5th term
2999		A. A B. A' C. U D. None of these
3000	graph of trigonometric function $y = \sec x$ does not meet	A. x - axis B. y -axis C. both axis D. None of these

3001	Question Image	
3002	The complement of set A relative to universal set U is the set	
3003	The quadratic equation $8 \sec^2 \theta - 6 \sec \theta + 1 = 0$ has	A. Infinitely many roots B. Exactly two roots C. Exactly four roots D. No roots
3004	To draw conclusions from some experiments or few facts only is called	A. deduction B. implication C. conjunction D. induction
3005	A vector of magnitude zero is called	A. Position vector B. Null vector C. Free vector D. None of these
3006	Question Image	
3007	Question Image	A. $A^2 - 5A + 7I = 1$ B. $2A^2 - 3A + 7I = 0$ C. $A^2 - 5A + I = 0$ D. $A^2 - 5A + 7I = 0$
3008	The additive inverse of $\frac{2}{3}$ is	A. $\frac{3}{2}$ B. $-\frac{2}{3}$ C. $-\frac{3}{2}$ D. 0
3009	Which of the following is a scalar.	A. force B. frequency C. weight D. acceleration
3010	Question Image	A. $\sec 3x + c$ B. $-\operatorname{cosec} 3x + c$
3011	The slope of the line from B (2,-3) through A (0,3) is:	A. -3 B. $\frac{1}{3}$ C. 0 D. undefined
3012	If $ x < 1$, then the first two terms of $(1 - x)^{1/2}$ are	
3013	Question Image	
3014	Question Image	
3015	The coefficient of x^{18} in $(ax^4 - bx)^9$ after expansion is	A. $84a^3 b^6$ B. $22a^3 b^6$ C. $27a^4 b^5$ D. $28a^3 b^6$
3016	Question Image	A. $\pi / 4$ B. $\pi / 6$ C. $\pi / 3$ D. 0
3017	Question Image	A. hypothesis B. implication C. consequent D. antecedent
3018	Question Image	
3019	Which of the following is an identity matrix?	D. none of these
3020	Question Image	B. 1 C. -1
3021	The conic $ax^2 + 2hxy + by^2 + 2gx + 2fy + c = 0$ never represent a circle if	A. $a \neq b, h \neq 0$ B. $a = b$ C. $h \neq 0$ D. $h = 0$
3022	Question Image	A. Biconditional B. Implication C. Antecedent D. Hypothesis
3023	Question Image	A. zero at x B. differentiable at x C. continuous at x

		D. none of these
3024	The distance between the points (0 , 0) and (2, 1) is	A. 5 C. 0 D. 3
3025	The length of perpendicular from (3,1) to $4x + 3y + 20 = 0$ is	A. 6 B. 7 C. 3 D. 8
3026	Question Image	
3027	When we expand $(a + 2b)^5$ then	A. $a^5 + 10a^4b + 40a^3b^2 + 80a^2b^3 + 80ab^4 + 32b^5$ B. $a^5 + a^4b + a^3b^2 + a^2b^3 + ab^4 + b^5$ C. $5a^5 + 4a^4b + 3a^3b^2 + 2a^2b^3 + 1ab^4 + b^5$ D. None
3028	The nth term of a G.P. is	A. $a^{n-1}r^n$ B. $a^{n-1}r^{n+1}$ C. $a^{n-1}r^{n-1}$ D. $a^{n-1}r^{-n}$
3029	The set of first elements of the ordered pairs forming the relation is called is	A. Domain B. Range C. Ordered paris D. Relation
3030	The distance of the point (2, -3) from x-axis is	A. -2 B. -3 C. 2 D. 3
3031	Question Image	A. 1 B. -1 C. 0 D. I
3032	If $Z = (1, 2)$, then $Z^{-1} = ?$	A. (0.2, 0.4) B. (-0.2 ,0.4) C. (0.2,-0.4) D. (-0.2,-0.4)
3033	The mid point of the line segment joining the points (4,0) and (0,4) is	A. (4,4) B. (2,2) C. (-4,-4) D. (-2,-2)
3034	Which of the following has the same value as i^{113} ?	A. i B. -1 C. -i D. 1
3035	The straight line passing through the focus and perpendicular to the directrix of the conic is known as its	A. Tangent B. axis C. Focal chord D. major or manor axis
3036	Question Image	A. $100x^{99}$ B. $100x^{101}$ C. $-99x^{99}$ D. $-100x^{101}$
3037	A right angle is the angle of measure	A. 90' B. 60° C. 60" D. 90°
3038	$\cos^4\theta - \sin^4\theta =$	A. $\cos^4$ B. $\cos^2$ C. $-\sin$ D. $\sin^2$
3039	The distance between the parallel lines $3x - 4y + 3 = 0$ and $3x - 4y + 7 = 0$ is:	A. 2/3 B. 9/13 C. 4/5 D. 7/12

3040	Which one represents a sequence	A. an B. Sn C. a(n) D. {an}
3041	Question Image	A. -228 B. -1/288 C. -1/220 D. -1/177
3042	The vertex of the graph of the quadratic function $f(x) = x^2 - 10$, is	A. (0, -10) B. (-10, 0) C. (10, 0) D. (0, 10)
3043	Question Image	A. $\sin x + c$ B. $-\sin x + c$ C. $\cos x + c$ D. $-\cos x + c$
3044	The first three terms in the expansion of $(1 + x)^3$ are	A. $1 + 3x + 6x^2$ B. $1 - 3x + 6x^2$ C. $-3 - 3x - 6x^2$ D. $1 - 3x - 6x^2$
3045	Question Image	A. A B. B C. U D. None of these
3046	Question Image	B. x^{n-1}
3047	If the matrices A and B are conformable for multiplication then $(AB)^t =$ _____	A. AB B. $A^t B^t$ C. $B^t A^t$ D. $A^t B$
3048	Question Image	
3049	If m and n be two scalars, then $(m+n)g =$	A. 0 B. $m+n$ C. $m_a + n_a$ D. $ma - m_a$
3050	Question Image	
3051	Question Image	A. $p \leq r$ B. $p \geq r$ C. $p + r \leq 0$ D. $p - r \leq 0$
3052	Question Image	A. -10 B. 10/7 C. -10/7 D. -7/10
3053	Question Image	
3054	If $3x^{2-6} - 9x^{+1} = 0$ then the valid values of are.	A. (4, 2) B. (2, 1) C. (0, 1) D. (3, -3)
3055	If $f(x) = (-x)^2$ then $f(-2)$ is	A. 0 B. 2 C. -4 D. 4
3056	If $b_1, b_2, b_3, \dots$ are in G.P. with first term unity and common ratio r, then the minimum value of $b_1 - b_3 + b_5$ is equal to	A. 3/4 B. 1/4 C. 1 D. None of these
3057	Question Image	A. 0 B. 1 C. -1 D. none of these
3058	If (x_1, y_1) and (x_2, y_2) are the end points of a diameter then the centre of the circle is	
3059	Question Image	A. Commutative law of multiplication B. Closure law of multiplication C. Associative law of multiplication

D. Multiplication identity

3060	Question Image	A. $-\cot 4x + c$ B. $\cot 4x + c$ C. $\tan 4x + c$ D. $-\tan 4x + c$
3061	The function $\{f(x,y) y = ax^2 + bx + c\}$ is	A. One-one function B. Constant function C. Onto function D. Quadratic function
3062	The multiplicative inverse of -1 in the set $\{1-, 1\}$ is	A. 1 B. -1 C. +1 D. 0
3063	Question Image	
3064	Identity element, if it exists, is	A. inverse B. unique C. commutative D. associative
3065	Question Image	A. $P(A) + P(B)$ B. $P(A) - P(B)$ C. $P(A) \cdot P(B)$ D. $P(A) / P(B)$
3066	Question Image	
3067	The graph of a linear function is	A. a circle B. triangle C. a straight line D. none of these
3068	$\sin^{-1}(-x) =$	A. $\cos^{-1} 1/x$ B. $-\sin^{-1} X$ C. $\cot^{-1} X$ D. None of these
3069	$\sin \alpha =$	A. $2 \sin \alpha \cos \alpha$ B. $2 \sin \alpha \cos \alpha$ C. $2 \sin \alpha \cos \alpha$ D. $1 + \tan^2 \alpha$
3070	$30^\circ =$ _____	
3071	21.256°	A. $21^\circ 15' 21''$ B. $21^\circ 20' 56''$ C. $21^\circ 25' 1''$ D. $21^\circ 25' 6''$
3072	Question Image	A. Reflexive property B. Symmetric property C. Transitive property D. Additive property
3073	Question Image	A. $\sec x \tan x$ B. $\cos^2 x$ C. $\sin^2 x$ D. $\sec^2 x$
3074	Question Image	A. -3 B. -7 C. 1 D. 0
3075	If the sum of two unit vectors is a unit vector the the magnitude of their difference is	A. $\sqrt{2}$ B. $\sqrt{3}$ C. 1 D. None of these
3076	Question Image	
3077	A bag contains 5 white, 7 red and 5 black balls. If four balls are drawn one by one with replacement, the probability that none is white is	A. $(11/16)^2$ B. $(5/16)^2$ C. $(11/16)^4$ D. $(5/16)^4$

3078	If <u>a</u> and <u>b</u> are two vectors then $a+b =$	A. $b + a$ B. $b - a$ C. ab D. a^b
3079	Question Image	
3080	If a, b, c are in arithmetic progression, then $1/a, 1/b, 1/c$ are in	A. A.M B. G.M C. H.M D. G.P
3081	p th term of an H.P. is qr and q th term is pr then the r th term of the H.P. is	A. pqr B. 1 C. pq D. pqr^{p+q}
3082	Question Image	
3083	If the cone is cut by a plane perpendicular to the axis of the cone, then the section is a:	A. Circle B. ellipse C. hyperbola D. parabola
3084	If 5, 7 and 9 are A.Ms between a and b , then a and b is equal to	A. 2 and 12 B. 1 and 10 C. 3 and 11 D. -7 and 2
3085	Question Image	A. -2217 B. -8064 C. -1301 D. -8011
3086	Question Image	
3087	The exact degree value of the function $\sin^{-1}(-\sqrt{3}/2)$ is	A. 70° B. 50° C. 90° D. 60°
3088	If A, B and C are three matrices, and A is non singular then $AB = AC$ iff $B =$	A. A B. 0 C. C D. A^{-1}
3089	Question Image	
3090	The set of rational numbers between 0 and 1 is	A. Finite B. Null set C. Infinite D. None of these
3091	Question Image	
3092	To each element of a group there corresponds _____ inverse element	A. Two B. One C. No D. Three
3093	Question Image	
3094	If $f(x) = x^3 - 2x^2 + 4x - 1$, then $f(-2) = ?$	A. 0 B. -25 C. 5 D. 45
3095	Which is in the solution set of $4x - 3y < 2$	A. (3, 0) B. (4, 1) C. (1, 3) D. None
3096	In natural logarithm the base is	A. 1 B. 0 C. 10 D. e
3097	6 is	A. A prime integer B. An irrational number C. A rational number D. An odd integer
3098	$n(n-1)(n-2)$ in factorial form is	
3099	If one end of the diameter of the circle $x^2 + y^2 - 5x + 8y - 14 = 0$ is $(2, 7)$ then the other end is	A. (2, 7) B. (-2, -7) C. (2, -7) D. (-2, 7)

	$5x = 3y - 2z = 0$ is (3,4) the other end is:	C. (-2, 1) D. (2, -7)
3100	$(7,9) + (3,-5) =$	A. (4,4) B. (10,4) C. (9,-5) D. (7,3)
3101	The sum of all 2 digit number is	A. 4750 B. 3776 C. 4895 D. 4905
3102	The towers each 120 meters high are 800 meters apart. The measure of the angle of elevation from the base of one tower to the top of the other is	A. 12° B. 9° C. 7° D. -120°
3103	Question Image	
3104	The equation of the plane which bisects the line joining (2, 3, 4) and (6, 7, 8) is	A. $x + y + z - 15 = 0$ B. $x - y + z - 15 = 0$ C. $x - y - z - 15 = 0$ D. $x + y + z + 15 = 0$
3105	Question Image	
3106	The general equation of a circle is	
3107	Question Image	A. I and II quadrants B. I and III quadrants C. II and III quadrants D. II and IV quadrants
3108	Question Image	A. false B. true C. not valid D. undefine
3109	$\sec h x =$ _____	
3110	Which of the following diagrams represent into function?	
3111	How many arrangements of the letters of the word MISSIPPI, taken all together can be made?	
3112	Tangent isfunction	A. Inverse B. one-one C. in-to D. Periodic
3113	Question Image	
3114	If (2, 3) and (2, 5) are end points of a diameter of a circle, then the centre of the circle is	A. (2, 4) B. (4, 8) C. (0, 2) D. (0, -2)
3115	Period of $\cot x$ is _____	
3116	Question Image	
3117	If $4 \sin^2 \theta = 1$, then values of θ are	
3118	If a statement S(n) is true for $n = 1$ and the truth of S(n) for $n = k$ implies the truth of S(n) for $n = k + 1$, then S(n) is true for all	A. Real numbers n B. Integers n C. Positive integers n D. None of these
3119	The conjunction of $3 > 5$, and $5 > 9$, is	A. False B. True C. Disjunction D. Unknown
3120	Question Image	
3121	Question Image	
3122	Question Image	
3123	The law of tangents is _____	
3124	If $\cos^{-1} p + \cos^{-1} q + \cos^{-1} r = \pi$ then $p^2 + q^2 + r^2 =$	A. 3 B. 1 C. 2 D. 4

	2pqr is equal to	C. 2 D. -1
3125	If $f(x) = x^2$ then $f(0)$ is	A. 0 B. 1 C. 2 D. none of these
3126	The 6th term of an arithmetic sequence whose first term is 3 and common difference in zero is	A. 18 B. 6 C. 3 D. 0
3127	Question Image	A. -2 B. -1 C. 1 D. 2
3128	Question Image	A. 12 B. 13 C. 14 D. 15
3129	$f(x) = x$ is	A. trigonometric function B. exponential function C. quadratic function D. identify function
3130	There are 50 students in a class out of these 38 used desktop computer 16 out of these used laptop. It is noted that five students neither used laptop of computer. The students having both laptop and computer are A. Based on the information find out the greatest value of A.	A. 16 B. 8 C. 4 D. 0
3131	Probability of an impossible event is	A. 0 B. -1 C. 1 D. ∞
3132	The set of natural no. is closed under	A. multiplication B. subtraction C. difference D. division
3133	If A is any matrix, and r is a scalar, then $(rA)'$	A. $r'A'$ B. r/A' C. $1/rA'$ D. rA'
3134	The range of $y=x^2 + 1$ is the set of non-negative real numbers except	A. $0 \leq y < 1$ B. $0 \leq y \leq 1$ C. $0 \leq y \leq 1$ D. $0 \leq y \leq 1$
3135	The function $\phi(x)$ is an anti derivative of function $f(x), x \in D$ if	A. $\phi'(x) = f(x)dx$ B. $\phi(x) = f(x)dx$ C. $\phi'(x) = f(x)$ D. $\phi(x) = f'(x)dx$
3136	The radian measure of the central angle of an arc 50 m long on a circle of radius 25 m is	A. 3 B. 2 C. 1
3137	A circle which touches one side of a triangle externally and the other two sides produced is called	A. In-circle B. Circumcircle C. e-circle D. Point circle
3138	The inclination of a line parallel to x-axis is	
3139	Which of the following is a scalar.	A. electric field B. magnetic field C. weight D. mass
3140	Question Image	D. all are correct
3141	Question Image	
3142	If $x^3 + ax^2 - a^2x - a^3$ is divided by $x + a$, then the remainder is	A. 0 B. a^3 C. $2a^3$ D. $-2a^3$
3143	Negation of a given number is an example of	A. Binary operation B. group C. unary operation

		D. function
3144	The probability that the sum of dots appearing in two successive thrown of two dice, in every time 7 is	A. 1/5 B. 1/36 C. 1/7 D. 1/63
3145	Question Image	A. Square matrix B. Row matrix C. Symmetric matrix D. Null matrix
3146	Question Image	
3147	In one hour, the minute hand of a clock turns through	
3148	Question Image	
3149	Question Image	D. none of these
3150	Question Image	
3151	If $\#n = (n-5)^2 + 5$, then find $\#3 \times \#4$.	A. 54 B. 12 C. 4 D. 9
3152	Question Image	A. 1 B. 2 C. 3/2 D. 5/2
3153	Question Image	A. G.P. B. H.P. C. A.P. D. No particular sequence
3154	The line $Ax + By + C = 0$ will touch the circle $x^2 + y^2 = \lambda$ when	A. $C^2 \geq A^2 + B^2$ B. $A^2 \geq C^2 + B^2$ C. $B^2 \geq A^2 + C^2$ D. None of these
3155	In a country 55% of the male population has houses in cities while 30% have houses both in cities and in villages find the percentage of the population that has houses only in villages	A. 45 B. 30 C. 25 D. 50
3156	Multiplicative inverse of "1" is	A. ± 1 B. 0 C. 1 D. None of these
3157	The roots of the equation $2^{2x} \cdot 10 \cdot 2^x + 16 = 0$ are	A. 2, 8 B. 1, 3 C. 1, 8 D. 2, 3
3158	If y is an image of x under the function f, then we write	A. $y = f(x)$ B. $x = f(y)$ C. $y = x$ D. none of these
3159	$\sin(\alpha - \beta) =$	A. $\sin\alpha \cos\beta - \cos\alpha \sin\beta$ B. $\sin\alpha \cos\beta + \cos\alpha \sin\beta$ C. $\sin\alpha \sin\beta - \cos\alpha \cos\beta$ D. $\sin\alpha \sin\beta + \cos\alpha \cos\beta$

3178	Question Image	
3179	(0,1) is in the solution of the inequality	A. $3x + 2y > 8$ B. $2x - 3y \leq 4$ C. $2x + 3y > 5$ D. $x - 2y \leq -5$
3180	If A, G, H are the arithmetic, geometric and harmonic means between a and b respectively then A, G, H are in	A. A. P. B. G. P. C. H. P. D. None of these
3181	Question Image	
3182	Question Image	A. $-\sin\theta$ B. $\cos\theta$ C. $\sin\theta$ D. $-\cos\theta$
3183	The coefficient of the third term of $(8a-b)^{1/3}$, after simplification is	A. -228 B. $1/288$ C. $1/220$ D. $-1/177$
3184	Question Image	A. $2s^2$ B. $2s^3$ C. s^3 D. $3s^3$
3185	$1/3$ is a decimal	A. Recurring B. Terminating C. Non-terminating D. None of the above
3186	Question Image	A. $\cos 2x + c$ B. $-\cos 2x + c$ C. $\tan 2x + c$ D. $\cot 2x + c$
3187	For $n \in \mathbb{N}$, $2^{n-2} > n$ is to only when	A. $n \leq 2$ B. $n \leq 4$ C. $n \geq 4$
3188	The multiplicative inverse of 1 is	A. 1 B. -1 C. 0 D. Does not exist
3189	Question Image	A. 0 B. 1
3190	$\sec^{-1}x =$	A. $\cos^{-1}1/x$ B. $\operatorname{cosec}^{-1}1/x$ C. $\cos^{-1}(-x)$ D. $\tan^{-1}x$
3191	The geometrical representation of a linear function is	A. Circle B. Parabola C. Straight line D. None of these
3192	A box containing 10 mangoes out of which 4 are rotten. Two mangoes are taken together from the box. If one of them is found to be good, the probability that the other is also good is	A. $1/3$ B. $8/15$ C. $5/13$ D. $5/9$
3193	The sum of first twenty odd integers in A.P is	A. 400 B. 397 C. 404 D. 408
3194	E-radius corresponding to $\angle B$ is	
3195	Question Image	
3196	One degree is denoted by	A. 1^0 B. $1'$ C. $1''$ D. 1 rad

3197	If A,B and C are three matrices of same order, and $(A+B)D=AD+BD$, what is this property called?	A. right distributive property B. Left distributive property C. Associative property D. Lest associative property
3198	Question Image	
3199	How many signals can be given by 5 flags of different colours, using 3 flags at a time	A. 120 B. 60 C. 24 D. 15
3200	Addition is not operation on	A. Natural numbers B. Even numbers C. odd numbers D. set of integers
3201	Question Image	A. Improper rational fraction B. Proper rational fraction C. Polynomial D. Equation
3202	Period of $\tan 4x$ is _____	
3203	The points A(3,1),B(-2,-3),C(2,2) are vertices of an (an)	A. Right triangle B. Equilateral triangle C. Isosceles triangle D. Scalene triangle
3204	If $\sin(\pi \cos \theta) = \cos(\pi \sin \theta)$, then which of the following is correct?	
3205	The axis of the parabola $y^2 = 4ax$ is	A. $X = 0$ B. $Y = 0$ C. $X = y$ D. $X = -y$
3206	$\cos(\alpha + \beta) + \cos(\alpha - \beta) =$	A. $4 \cos \alpha \cos \beta$ B. $2 \cos \alpha \cos \beta$ C. $2 \sin \alpha \sin \beta$ D. $2 \sin \alpha \cos \beta$
3207	Question Image	A. image B. pre-image C. constant D. none of these
3208	If $a > 0$, $b > 0$, $c > 0$, then the roots of the equation $ax^2 + bx + c = 0$ are	A. Real and negative B. Non-real with negative real parts C. Real and positive D. Nothing can be said
3209	If $\text{Proj}_v u = \text{Proj}_u v$, then	A. u and v are parallel B. $u = v$ C. u and v are perpendicular D. One of u or v
3210	For a square matrix A, if $A = A^t$, then A is called	A. matrix B. Transpose C. Symmetric D. Non-symmetric
3211	Question Image	
3212	The area of a sector with central angle of 0.5 radians in a circular region whose radius is 2m is	
3213	What is the period of $\cos 6x$ =?	A. $\pi/2$ B. $\pi/3$ C. $\pi/4$ D. π
3214	Question Image	D. none of these
3215	If $ax^2 + bx + x = 0$ is satisfied by every value of x, then	A. $b = 0$, $c = 0$ B. $c = 0$ C. $b = 0$ D. $a = b = c = 0$
3216	Question Image	
3217	If S is a sample space and event set $E = \Phi$ then $P(E)$ is	A. > 0 B. 1 C. < 1

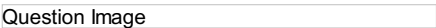
D. 0

3218	A die is thrown, the probability that the dots on the top are prime numbers or odd numbers is	A. $\frac{1}{2}$ B. $\frac{2}{3}$ C. $\frac{1}{3}$ D. $\frac{2}{5}$
3219	Question Image	
3220	Question Image	A. $\frac{1}{2}$ and $\frac{1}{3}$ B. $\frac{1}{2}$ and $\frac{1}{4}$ C. $\frac{1}{2}$ and $\frac{1}{5}$ D. none of these
3221	Two matrices a and B are said to be conformable for multiplication AB if the number of columns of A is equal to the numbers of	A. Columns of B B. Rows of B C. Columns of AB D. Rows of AB
3222	If in a set of real no a is multiplicative identity then	A. $a \cdot a = a^2$ B. $a \cdot a = 1$ C. $a \cdot a = 0$ D. None of these
3223	Question Image	A. Singular B. Non-singular C. Adjoint D. None of above
3224	If the intersecting plane is parallel to a generator of the cone, but intersects its one nappe only, the curve obtained is	A. an ellipse B. a hyperbola C. a circle D. a parabola
3225	Question Image	B. $\ln(x^2 - x + 1) + c$ D. $\ln(2x - 1) + c$
3226	Which term of the A.P 5,8,11,24.....is 320	A. 104th B. 106th C. 105th D. 64th
3227	For Cosine Rule of any triangle ABC, b^2 is equal to	A. $a^2 + c^2 + 2ac \cos B$ B. $a^2 + c^2 - 2ac \cos B$ C. $a^2 + c^2 - 2ac \cos A$ D. $a^2 + c^2 + 2ac \cos A$
3228	If A and B are two sets then any subset R of $B \times A$ is called	A. relation on A B. relation on B C. relation from A to B D. relation from B to A
3229	The quadratic formula is	

3230	Question Image	
3231	Question Image	
3232	The set of the first elements of the orders pairs forming a relations is called its	A. Relation in B B. Range C. Domain D. Relation in A
3233	Roots of the equation $x^2 + 2x + 3 = 0$ are	A. Real and equal B. Real and distinct C. Complex D. None of these
3234	Question Image	A. Free vector B. Null vector C. Unit vector D. None of these
3235	The function sine and Cosine have the closed interval as their range	A. [1, 0] B. [-1, 1] C. [0, 1] D. [-1, 2]
3236	Question Image	A. 0 B. Independent of a C. Independent of b D. Independent of c
3237	Question Image	
3238	The real numbers which satisfy an inequality form its	A. solution B. coefficient C. domain D. range
3239	If G is a G.M between a and b then a,G,b are in	A. A.P B. H.P C. G.P D. None of these
3240	Question Image	
3241	Which of the following is a quadrantal angle	A. 100° B. 200° C. 170° D. 270°
3242	If ${}^4P_r = {}^6P_{r+1}$, then r is equal to	A. 4 B. 3 C. 2 D. 1
3243	If a_1 , r and a_n are the first term, common ratio and the nth term respectively of a G. P. then $a_n =$	A. $a_1 r^{n-1}$ B. $a_1 r^{n-1}$ C. $a_1 r^{n+1}$ D. $a_1 r$
3244	$w^4 =$ _____	A. 0 B. 1 C. w D. w^2
3245	The function $f(x) = x $ is a/an _____ function	A. Even B. Odd C. Both even as well as odd D. Neither even nor odd
3246	The set of integer is	A. Finite group B. A group w.r.t addition C. A group w.r.t multiplication D. Not a group
3247	Number of combination of zero or more things out of n different things	A. nP_n B. nP_r C. nC_r D. 2^n
3248	If $a^x = b^y = c^z$ and a, b, c are in G.P. then x, y, z are in	A. A.P. B. G.P. C. H.P. D. None of these
3249	Question Image	
3250	The approximate increase in the area of a circular disc if its diameter increased from 44cm	A. 0.4cm B. 8.8π cm C. 17.6π cm D. 17.6 cm

	to 44.4cm is	C. 17.6 πcm D. 35.2πcm
3251	Question Image	A. N B. r C. 2r D. <i>π</i>
3252	The distance of the point (2,3) from y-axis is	A. 2 B. 3 C. 5
3253	$w^{73} = \underline{\hspace{2cm}}$	A. 0 B. 1 C. w D. $w^{2^{73}}$
3254	$\cos(\alpha + \beta) - \cos(\alpha - \beta) =$	A. $-2 \sin \alpha \sin \beta$ B. $2 \sin \alpha \sin \beta$ C. $-2 \sin \alpha \cos \beta$ D. $4 \sin \alpha \cos \beta$
3255	Question Image	A. 1 B. 0 C. 3 D. -3
3256	Sequence also called.....	A. Series B. Function C. progressions D. Elements
3257	What is the value of $\cos^{-1}(1/2)$?	A. $\pi/3$ B. $\pi/4$ C. $3\pi/2$ D. $\pi/6$
3258	The number of triplets (x, y, z) satisfying $\sin^{-1}x + \cos^{-1}y + \sin^{-1}z = 2\pi$ is	A. 0 B. 2 C. 1 D. Infinite
3259	Question Image	
3260	The multiplicative inverse of -1 in the set {1,-1} is	A. 1 B. -1 C. ±1 D. 0 E. Does not exist
3261	The three consecutive numbers a, $\sqrt{ab}$, b are in	A. G.P B. H.P C. G.M D. None of these
3262	How many committees of 5 numbers can be chosen from a group of 8 players person when each committee must include 2 particular persons	A. 8! B. 5!3! C. 5! D. 20
3263	The multiplicative inverse of -1 in the set {1-, 1} is	A. 1 B. -1 C. 0 D. Does not exist
3264	Question Image	A. 2 B. 5 C. 7 D. None of these
3265	If $f(x) = x^2 - x$ then $f(0)$ is	A. 0 B. 1 C. 2 D. 3
3266	Question Image	

3267	If $ab > 0$ and $a < 0$, which of the following is negative?	A. b B. $-b$ C. $-a$ D. $(a - b)^2$
3268	Question Image	
3269	The angles of elevation of the top of a tower at the top and the foot of a pole of height 10 m are 30° and 60° respectively. The height of the tower is	A. 10 m B. 15 m C. 20 m D. None of these
3270	Which of the following are valid roots of $3x^3 - 8x^2 - 5x + 6$	A. -1 B. 3 C. 1 D. Both A and B
3271	Question Image	A. Diagonal matrix B. Scalar matrix C. Triangular matrix D. Identity matrix
3272	Question Image	
3273	Question Image	A. 1 B. -i C. i D. 0
3274	If $f(x) = 1/x - 2$ then $f^{-1}(0)$ equals:	A. -1/4 B. $-3/2$ C. $-1/2$ D. $1/5$
3275	The square matrix A is skew-symmetric when $A^t =$	A. $-B$ B. $-C$ C. $-A$ D. $-D$
3276	Question Image	A. Associative law of multiplication B. Commutative law of addition C. Commutative law of multiplication D. Associative law of addition
3277	Question Image	A. 2 B. $-3/2$ C. 1 D. 0
3278	$4/\sqrt{49}$ is a	A. Irrational Number B. Prime Number C. Rational number D. Whole number
3279	The range of the principle cot function is	
3280	Question Image	
3281	$\sqrt{23}$ is	A. A rational number B. A irrational number C. An even integer D. A factor of 36
3282	For all points (x,y) in first quadrant	A. $x \geq 0, y \leq 0$ B. $x \geq 0, y \geq 0$ C. $x \leq 0, y \leq 0$ D. $x \leq 0, y \geq 0$
3283	Which of the following is not a quadrantal angle	A. 90° B. 100° C. 180° D. 270°
3284	The roots of the equation $x^2 + 6x - 7 = 0$, are	A. 1 B. 2 C. 1 and -7 D. -7
3285	The set of all antiderivatives of $f(x) = \int f(x) dx$ is the	A. Definite integral B. Indefinite integral C. Integral D. Area
3286	Question Image	A. 8 C. 4 D. 64

3287	Let the sequence 1, 2, 2, 4, 4, 4, 4, 8, 8, 8, 8, 8, 8, 8, where n consecutive terms have the value n, then 1025th term is	A. 2^9 B. 2^{10} C. 2^{11} D. 2^8
3288	The period of cosec 10x is _____	
3289		
3290	$(x-1)$ is a factor of	A. $2x^3-3x^2+9$ B. $2x^3-5x-8$ C. $48x^2-46x-9$ D. x^9-1
3291	$n!/(n-1)! =$	A. n B. n! C. $(n-1)!$ D. 0!
3292	The domain the function : $f(x) = x^2$ is given by	A. R B. Set of all non-negative Real numbers C. $R^{>-1}$ D. None of these
3293	If $Z_1 = 1 + i$, $Z_2 = 2 + 3i$, then $ Z_2 - Z_1 = ?$	
3294	Domain of $1 + \cot 2\theta = \csc 2\theta$ is	A. $[0, \pi]$ B. $R - \{x/x = n\pi, n \in \mathbb{Z}\}$ C. $(-\infty, +\infty)$ D. $[-1, 1]$
3295	If A is a matrix of order 3×3 and I is an identity matrix of order 3×3 , then $AI =$	A. A B. I C. Not possible D. A^{-1}
3296		
3297		B. $a = b, h = 0$ C. $f = g, h = 0$ D. $h = h, c = 0$
3298		
3299	Two straight line are given as $M: y = -1/3 x + 2$ which of the following statement is correct	A. M & N are parallel B. M & N are not intersect C. M & N is perpendicular D. M & N are intersect at multiple
3300	$n^2 - 1$ divisible by 8 when n is	A. an odd integer B. an even integer C. Irrational D. Prime Number
3301	Cofactor of an element a_{ij} is defined by	A. $(-1)^{i+j} A $ B. $(-1)^{i+j}M_{ij}$ C. $(-1)^{i+j}M^{>-1}$ D. None of these
3302		D. none of these
3303	The greater part of our knowledge, is based on	A. deduction B. induction C. conjunction D. disjunction
3304		A. $a^2b^2c^2$ B. $4a^2b^2c^2$ C. $4abc$ D. None
3305	The distance of the point $(-2, 3)$ from x-axis is	A. -2 B. 2 C. 3 D. 1
3306		
3307		
3308	$(1, 0)$ is in the solution of the inequality	A. $3x + 2y > 8$ B. $2x - 3y \leq 4$ C. $2x + 3y > 3$ D. $x - 2y \leq -5$
3309		A. A circle B. A degenerate circle

3309	The equation $x^2 + y^2 = 0$ represents	B. A degenerate circle C. An empty set D. A st. line
3310	Question Image	
3311	No term of a harmonic sequence can be	A. 0 B. 1 C. 2 D. 3
3312	A conditional "if p then q" is denoted by	
3313	$\sin^{-1} x =$	A. $\sin(\pi/2 - x)$ B. $\sin^{-1}(\pi/2 - x)$ C. $\pi/2 - \cos^{-1} x$ D. $\pi/2 + \cos^{-1} x$
3314	Question Image	A. The law of sines B. The law of cosines C. The law of tangents D. None of these
3315	A function from A to B is called on-to function, if its range is	A. A B. B C. A and B D. neither A nor B
3316	The principal value of $\sin^{-1}[-\sqrt{3}/2]$ is	A. $5\pi/3$ B. $-2\pi/3$ C.  D. $\pi/3$
3317	A square matrix $A = [a_{ij}]$ is lower triangular matrix when	A. $a_{ij} = 0$ for all $i \leq j$ B. $b_{ij} = 0$ C. $c_{ij} = 0$ D. $d_{ij} = 0$
3318	Question Image	
3319	The standard parabolic form of the equation $f(x) = x^2 + 4x + 1$ is	A. $x(x+4)+1$ B. $(x+2)^2 - 3$ C. $(x+4)^3 + 9$ D. $x(x-2)^2 + 1$
3320	The set $\{1, -1, i, -i\}$ form a group under	A. Addition B. Multiplication C. Subtraction D. None
3321	The third term of a G.P. is 4, The product of first five terms is	A. 43 B. 45 C. 46 D. None of these
3322	A diagonal matrix in which the diagonal elements are equal is called a	A. Null matrix B. Identity matrix C. Scalar matrix D. Row matrix
3323	Question Image	
3324	$\cos(\pi/2 - \theta) =$ _____;	A. $\cos \theta$ B. $\sin \theta$ C. $-\cos \theta$ D. $-\sin \theta$
3325	Question Image	A. Associative property of addition B. Associative property of multiplication C. Commutative property of addition D. Commutative property of multiplication
3326	The proposition $S(k+1)$ is true when _____ is true $\forall k \in \mathbb{N}$	A. $S(n)$ B. $S(k)$ C. $S(1)$ D. $S(k-1)$
3327	Question Image	A. 1700 B. 17023 C. 17027 D. 17010
3328	Question Image	
3329	The line joining the center of a circle to the	A. Perpendicular to the tangent B. Perpendicular to the normal

3329	midpoint of the chord is	C. Perpendicular to the chord D. Perpendicular to the chord
3330	If $\underline{u} = 2a\underline{j} + \underline{j} - \underline{k}$ and $\underline{v} = \underline{j} + a\underline{i} + 4\underline{k}$ are perpendicular then $a =$	A. 4 B. 1/2 C. 3 D. 4/3
3331	A complex number "1 + i" can also be expressed as"	A. $2(\cos 60^\circ + i \sin 30^\circ)$ B. $\cos 60^\circ + i \sin 60^\circ$ C. $(\cos 60^\circ + i \sin 60^\circ)$ D. $\cos 30^\circ + i \sin 30^\circ$
3332	$xy = 2$ is:	A. a constant function B. an identity function C. an improper function D. implicit function
3333	Sum of two quantities is at least 20 is denoted by	A. $x + y = 20$ B. $x + y \geq 20$ C. $x + y \neq 20$ D. $x + y \leq 20$
3334		A. real number B. complex number C. rational number D. irrational number
3335	The graph of a quadratic function is	A. Circle B. Ellipse C. Parabola D. Hexagon
3336	$(1 - x)^3 =$ _____	A. $1 + 3x + 3x^2 + x^3$ B. $1 + x + x^2 + x^3$ C. $1 - x + x^2 - x^3$ D. $1 - 3x + 3x^2 - x^3$
3337	If A and B are two disjoint events then	A. $P(A \cup B) = P(A) + P(B)$ B. $P(A \cup B) = P(A) - P(A \cap B)$ C. $P(A \cup B) = P(A) \text{ or } P(B)$ D. None
3338	Three dice are thrown together. The probability of getting a total of at least 6 is	A. 103 / 108 B. 10 / 216 C. 93 / 108 D. None of these
3339	If the domain of sequence is finite set then the sequence is called	A. geometric sequence B. infinite sequence C. finite sequence D. arithmetic sequence
3340	For an arithmetic series to be convergent it is necessary that the series has	A. Finite terms B. $d \neq 0$ C. Infinite terms D. None of these
3341	The angle of depression of a point A on the ground from the top of the tower is 30° , then the angle of elevation of the top of the tower at the point A is	A. 60° B. 40° C. 41° D. 30°
3342		A. $a = -1/2, b = -1$ B. $a = 1, b = 2$ C. $a = 2, b = 3$ D. None of above
3343	The point on $y^2 = 4ax$ nearest to the focus has its abscissae equal to	A. -a B. a C. a/2 D. 0
3344	If the cutting plane is parallel to the axis of the cone and intersects both of its nappes, then the curve of intersection is	A. an ellipse B. a hyperbola C. a circle D. a parabola
3345		
3346	Root of the equation $3^{x-1} + 3^{1-x} =$ is	A. 2 B. 1 C. 0 D. -1
3347	The distance of the point (a,b) from y-axis is	A. a B. b C. a + b

3348	Question Image	A. -76 B. 96723 C. 5721 D. -96096
3349	If $f(x) = ax^2$, and $a > 0$, then the lowest point on the parabola is called.	A. Vertex of parabola B. Co-ordinates of parabola C. Roots of the equation D. Coefficient of the equation
3350	Question Image	
3351	Question Image	
3352	The points (x, y) which satisfy a linear inequality in two variables x and y from its	A. domain B. range C. solution D. none of these
3353	Question Image	
3354	Question Image	
3355	If $f(\sqrt{x}) = \sin x$, then $f'(x) =$ _____;	A. $2x \cos x^2$ B. $\cos x^2$ C. $\cos \sqrt{x}$ D. None of these
3356	The distance between the points (0, 0) and (1, 2) is	A. 5 C. 0 D. 3
3357	If $2 \tan^{-1}(\cos x) = \tan^{-1}(\operatorname{cosec}^2 x)$, then x is equal to	A. $\frac{\pi}{3}$ B. $\frac{\pi}{2}$ C. $\frac{\pi}{6}$ D. $\frac{\pi}{4}$
3358	The derivative of $\sqrt{x}$ at $x = a$ is:	A. $\frac{1}{2a}$ B. $\frac{2}{\sqrt{a}}$ C. $2\sqrt{x}$ D. $\frac{1}{2\sqrt{x}}$
3359	Question Image	