Mathematics FA Part 1 Online Test

Sr	Questions	Answers Choice
1	Question Image	D. i
2	$-2 \sin \alpha \sin \beta =$	A. $\sin(\alpha + \beta) + \sin(\alpha - \beta)$ B. $\cos(\alpha + \beta) + \cos(\alpha - \beta)$ C. $\cos(\alpha + \beta) - \cos(\alpha - \beta)$ D. $\cos(\alpha - \beta) + \cos(\alpha - \beta)$
3	What is the general term of the sequence 2, 4, 6, 8, ... ?	A. 2n B. n + 1 C. $2n^2$ D. none of these
4	Question Image	
5	If the Discriminant of a quadratic equation is a perfect square, then roots are:	A. real and equal B. complex C. rational D. irrational
6	A circle drawn inside a triangle and touching its sides is known as:	
7	If α, β are the roots of $x^2 + kx + 12 = 0$ such that $\alpha - \beta = 1$ then K = :	A. 0 B. ±5 C. ±7 D. ±15
8	If W = {0, 1, 2, 3, 4, ...}, N = {1, 2, 3, 4 ....} then N - W = ?	A. W B. {0} D. none of these
9	A groupoid (S) is called _____ if it is associative in S:	A. group B. abelian-group C. semi-group D. associative-group
10	Question Image	A. 4 B. 6 C. 8 D. 10
11	Question Image	B. 10π
12	If one root of $2x^2 + ax + 6 = 0$ is 2 then the value of a is:	A. 7 B. -7
13	A dice is rolled, the probability of getting a number which is even or greater than 4 is:	D. none of these
14	A declarative statement which is either true or false but not both is called:	A. logic B. proposition C. induction D. deduction
15	Question Image	
16	If set A = {1, 2, 3} and B = {1, 2, 3} then sets A and B are:	A. not equal B. equal C. disjoint D. overlapping
17	A set containing finite number of elements is called:	A. nullset B. superset C. finiteset D. infiniteset
18	$r\, r_1\, r_2\, r_3 =$	D. abc
19	A function whose domain is the set of natural numbers is called the:	A. series B. sequence C. means D. convergent

In binomial expansion of $(a+b)n$, n is

20	In binomial expansion of (a + b)n, n is positive integer the sum of even coefficients equals:	D. none of these
21	Question Image	D. diagonal matrix
22	The imaginary part of the complex number a + bi is:	A. a B. b C. bi D. none of these
23	Question Image	
24	The range of principal cosine function is:	
25	Question Image	
26	Question Image	D. 20
27	Question Image	
28	What is called the difference between two consecutive terms of an arithmetic sequence ?	A. common ratio B. common difference C. common element D. none of these
29	Question Image	
30	If (x - 2, 2) = (3, 2), then:	A. x = 5 B. x = 2 C. x = -5 D. x = 3
31	Question Image	A. 1 + cos Θ B. 1 - cos Θ
32	If A is a square matrix, then A - A^t is:	
33	One card is drawn at random from a pack of 52 cards. The probability that the card drawn a king is:	D. none of these
34	If any two rows of a square matrix are interchanged, the determinant of the resulting matrix:	A. is zero B. is multiplicative inverse of the determinant of the original matrix C. is additive inverse of the determinant the original matrix D. none of these
35	The objects in a set are called:	A. elements B. sub-sets C. whole numbers D. overlapping sets
36	The graph of x = sin y is obtained by reflecting the graph of y = sin x about the line:	A. x axis B. y axis C. y = x D. y = -x
37	Reciprocals of the terms of the geometric sequence form:	A. A.P B. G.P C. H.P D. none
38	Question Image	A. scalar matrix B. diagonalmatrix C. triangularmatrix D. none of these
39	The range of principal sine function is:	
40	Question Image	
41	The lengths of the sides of a triangle are proportional to the sines of the opposite angles to the sides. This is known as:	A. The law of sines B. The law of cosines C. The law of tangents D. The fundamental law
42	Trigonometric equation has _____ solutions:	A. unique B. finite C. infinite D. no
43	Complex roots of real quadratic equation always occur in:	A. conjugate pair B. ordered pair C. reciprocal pair D. none of these
		A. 25 B. 20

44	Question Image	B. 20 C. 40 D. 2a + 2b + 2c
45	Question Image	A. closureproperty B. associativeproperty C. commutativeproperty D. trichotomyproperty
46	if sin x + cos x = 0, then x = _____ :	D. none of these
47	If $4^x = 2$, then x equals:	A. 2 B. 1
48	If A is a matrix of order m × n, then the number of elements in each row of A is:	A. m B. n C. m + n D. m - n
49	Question Image	A. 1 B. -1 C. -6 D. 6
50	Question Image	A. additive property B. multiplicative inverseproperty C. transitive property D. negative property
51	Question Image	
52	A circle which touches one side of a triangle externally and the other two produces sides internally is known as:	
53	Question Image	A. quadratic equation B. reciprocal equation C. exponential equation D. none of these
54	Question Image	A. a is an element of a set A B. a is subset of A C. a is a whole number D. a contains A
55	A circle passing though the vertices of a triangle is known as:	
56	$\cos^{-1}(-x) =$	A. $\pi + \cos^{-1} x$ B. $\pi - \cos^{-1} x$ C. $\pi + \sin^{-1} x$ D. $\pi - \sin^{-1} x$
57	Question Image	A. degree of P(x) = degree of Q(x) B. degree of P(x) < degree of Q(x) C. degree of P(x) > degree of Q(x) D. none of these
58	The number of subsets of a set having three elements is:	A. 2 B. 3 C. 4 D. 8
59	Zero cannot be a term of:	A. A.P and G.P B. G.P and H.P C. A.P and H.P D. only H.P
60	Question Image	
61	The middle terms of $(x+y)^{23}$ are:	A. T_{10}, T_{11} B. T_{11}, T_{12} C. T_{12}, T_{13} D. none of these
62	Question Image	
63	Question Image	
64	Irrational numbers are:	A. terminating decimals B. non-terminating decimals C. non-terminating, repeating decimals D. non-terminating, non repeating
65	Factors of $x^2 + y^2$ are:	A. (x + iy) (x - iy) B. (x + y) (x - y) C. (x + y) (x + y) D. none

66	Question Image	D. none of these

67	What is the next term in the sequence 10, 7, 4, 1...........?	A. 2 B. -2 C. -3 D. none of these

68	Question Image	

69	The period of tan 2x is:	

70	π, e are:	A. integers B. natural numbers C. rationalnumbers D. irrationalnumbers

71	Conjugate of complex number (-a, -b) is:	A. (-a, b) B. (-a, -b) C. (a, -b) D. none of these

72	$\cos^4\Theta - \sin^4\Theta =$	A. sin 2Θ B. cos 2Θ C. tan 2Θ D. sec 2Θ

73	Inverse sine function is written as:	A. $(\sin x)^{-1}$ B. $\sin x^{-1}$ C. arc sinx D. arc $\sin^{-1}$ x

74	In triangle the length of the sides are 7, 4$\sqrt{3}$ and $\sqrt{13}$. Then the smallest angle is:	A. 15° B. 30° C. 60° D. 45°

75	If z = x + i y = r (cos Θ + i sin Θ), then arg z is:	A. tan Θ B. $\cos^2\Theta + \sin^2\Theta$ C. r D. Θ

76	How many different number can be formed by taking 4 out of the six digits 1, 2, 3, 4, 5, 6:	A. 360 B. 120 C. 366 D. none of these

77	Question Image	

78	The real part of the complex number a + bi is:	A. b B. -b C. a D. -a

79	When two sides and included angle is given, then area of triangle is given by:	D. all of these

80	The period of sec 2x is:	

81	Question Image	A. 0 B. 1 C. 3 D. 2

82	Question Image	A. 5 B. 14 C. 20 D. 6

83	A statement which is true for all possible values of the variables involved in it, is called a:	A. tautology B. conditional C. implication D. absurdity

84	Every real number is also a/an:	A. integer B. rational number C. irrationalnumber D. complexnumber

85	Question Image	A. Reflexive property B. Symmetricproperty C. Transitiveproperty D. Trichotomyproperty

86	In 2s = a + b + , then in any triangle ABC:	D. all of above

| | | A. singular |

87	Question Image	B. non-singular C. rectangular D. null
88	No. of arrangements of the letters of the word PAKISTAN can be made, taken all together ?	A. 21160 B. 20160 C. 20170 D. 20016
89	The order of a matrix is shown by:	B. number of columns + number of rows C. number of rows × number of columns D. number of columns - number of rows
90	Question Image	A. sin x B. cosec x
91	The series 2 + 2 + 2 ..... is:	A. divergent B. convergent C. oscillatory D. none of these
92	If, for all x in the domain of f, there exists a smallest positive number p such that f (x+p) = f(x), then p is the:	A. period of f B. period of 2f C. period of 3 f D. period of 4 f
93	If A and B are two matrices, then:	A. A B = O B. AB = BA C. AB = I D. AB may not be defined
94	The additive inverse of a real number is a:	A. 0 B. -a C. a
95	$\tan^{-1}(-x) =$	A. $\tan^{-1}x$ B. $\cot^{-1}x$ C. $-\tan^{-1}x$ D. $-\cot^{-1}x$
96	Question Image	A. quad I B. quad. II C. quad. III D. quad. IV
97	Question Image	A. cancellation property w.r.t multiplication B. cancellationproperty w.r.t addition C. multiplicativeproperty D. additiveproperty
98	Question Image	A. i B. 0
99	In a right isoceles triangle, one acute angle is:	A. 30° B. 45° C. 60° D. 75°
100	Two matrices X and Y are equal if and only if:	A. X and Y are of same order B. Their corresponding elements are equal C. Both a and b D. None of these
101	Question Image	
102	Question Image	
103	If each element in any row or each element in any column of a square matrix is zero, then value of the determinant is:	A. 0 B. 1 C. -1 D. none of these
104	The general solution of sin x = cos x is _____:	A. nπ B. 2nπ
105	x2 - 5x + 6 = 0 is:	
106	π is defined as:	A. ration of diameter of a circle to its circumference B. ration of the circumference of a circle to its diameter C. ration of area of a circle to its circumference D. ration of the circumference of a circle to its area
107	The product of three G.Ms between 1 and 16 is:	A. 32 B. 64 C. 128 D. 16
	Sum of all positive integral multiples of 3	A. 950 B. 760

108	Sum of all positive integral multiples of 5 less than 100 is:	C. 1230 D. 875
109	$3^{2x} - 3^x - 6 = 0$ is:	A. reciprocal equation B. exponentialequation C. radicalequation D. none of these
110	Sequences are also called:	A. Series B. Progressions C. Means D. Convergence
111	Question Image	A. 2 B. 4 C. 6 D. 8
112	tan (270° + Θ) is equal:	A. cot Θ B. tan Θ C. -cot Θ D. -tan Θ
113	Which one is exponential equation:	A. $ax^2 + bx + c = 0$ B. ax + b = 0 D. $2^x = 16$
114	Reference angles is always in:	A. IQ B. IIQ C. IIIQ D. IVQ
115	tan (α+ß) =	
116	A set is defined as:	A. collection of some objects B. well defined collection of some objects C. well defined collection of distinct objects D. none of these
117	Question Image	
118	Four fourth roots of 625 are:	A. ±5,±5i B. ±5,±25i C. ±25,±25i D. none of these
119	Question Image	
120	Question Image	
121	Question Image	A. right angled B. equilateral C. isosceles D. obtuse angled
122	Sum of all odd numbers between 100 and 200 is:	A. 6200 B. 6500 C. 3750 D. 7500
123	Question Image	A. c = 0 B. b = 0, c = 0
124	If triangle ABC, If ß = 90° then:	D. none of these
125	If two rows (or two columns) in a square matrix are identical (i.e. corresponding elements are equal), the value of the determinant is:	A. 0 B. 1 C. -1 D. ±1
126	If A = [a$_{ij}$], B = [b$_{ij}$] and AB = 0 then:	A. A = 0 B. B = 0 C. either A = 0 or B = 0 D. A & B not necessarily zero
127	Which trigonometric equation has secondary solution ?	A. sin Θ = 1 B. cos Θ = 1 C. sec Θ = 0 D. tan Θ = 1
128	The period of sin 2x is:	A. π B. 2π C. 3π
129	Question Image	A. 0 B. -1 C. >1 D. none

130	Distinct objects means:	A. identical objects B. not identical C. similar D. none of these
131	If there are six G.Ms between 3 and 284 then G_4 =	A. 24 B. 48 C. 12 D. 6
132	The angle between 0° and 360° and co-terminal with - 620° is:	A. 100° B. 200° C. 300° D. 320°
133	If A is non singular matrix then A^t is:	A. singular B. nonsingular C. symmetric D. none
134	If n(S) = 3 then n {P(S)} =	A. 2 B. 8 C. 16 D. 4
135	What is the general term of the geometric sequence -1, 1, -1, 1 .... ?	A. $(-1)^n$ B. $(1)^n$ C. $(-1)^{n-1}$ D. none of these
136	Question Image	A. rationalnumber B. irrationalnumber C. naturalnumber D. wholenumber
137	Question Image	
138	The direction of an angle Θ is determined by its:	A. value B. magnitude C. ratio D. sign
139	Question Image	
140	Question Image	A. real numbers B. complexnumbers C. primenumbers D. oddnumbers
141	1° is equal to:	
142	Question Image	
143	Question Image	A. zero B. non-singular C. singular D. none of these
144	Synthetic division is a process of:	A. division B. subtraction C. addition D. multiplication
145	r_1 =	
146	Question Image	A. tan x B. cot x
147	Question Image	
148	Which one is not a quadrant angle ?	A. 0° B. 90° C. 280° D. 270°
149	No. of necklaces can be made from 7 beads of different colors ?	A. 360 B. 120 C. 60 D. 70
150	Conjugate of -3 -2 i is:	A. 3 + 2i B. -3 + 2i C. 2 + 3i D. -2 + 3i
	A triangle which is not right angle triangle	A. acute B. obtuse

151	A triangle which is not right angle triangle called _____ triangle:	B. obtuse C. right D. oblique
152	The multiplicative identity of real numbers is:	A. 0 B. 1 C. 2 D. -1
153	The period of sec 3x is :	
154	Question Image	A. B B. A D. none of these
155	In binomial expansion $(a+b)^n$, n is positive integer the sum of coefficients equals:	D. none of these
156	If n is a positive integer, then the binomial co-efficient equidistant form the beginning and the end in the expansion of $(x+a)^n$ are:	A. same B. not same C. additive inverse of each other D. none of these
157	Domain of finite sequence is:	A. set of natural numbers B. subset of N C. R D. none
158	The period of 2 - sin 3x is:	
159	tan (α - ß) =	
160	Question Image	A. r_1 B. r_2 C. r_3 D. r
161	In a circle of radius r, an arc of length kr will subtend in angle of _____ radians at the center:	A. s B. k C. r D. Θ
162	If P(x) is a polynomial of degree m and Q(x) is a polynomial of degree n, the product P(x) . Q(x) will be a polynomial of degree:	A. m . n B. m - n C. m + n D. m × n
163	No. of arrangements can be made of 4 letters a, b, c, d taken 2 at a time ?	A. 8 B. 12 C. 10 D. 14
164	The probability that a number selected from the numbers 1, 2, 3, 4, 5, ..., 16 is a prime number is:	
165	If an angle α is allied to an angle ß, then α ± ß = _____:	A. 90° B. multiple of 90° C. 180° D. multiple of 180°
166	In a triangle ABC b = √3, c = 1, α = 30° then a = :	A. 2 B. 1 C. 3 D. -1
167	Question Image	
168	Question Image	A. rational number B. irrational number C. natural number D. whole number
169	Question Image	A. 0 B. i C. -i D. 1
170	G.M between -2i and 8i is:	A. 4 or -4 B. 4i or -4i C. 2 or -2 D. none
171	If $a_n = (n + 1) a_{n-1}$, $a_1 = 1$, second term of the sequence is:	A. 3 B. 1 C. 2 D. 4
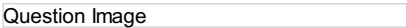
172	If $z_1 = 4i$ and $z_2 = 3 - 9i$, then $z_1 + z_2 =$	A. 3 - 5i B. 3i - 5 C. 7 - 9i D. 3 + 5i
173	Question Image	
174	A matrix of order m×1 is called:	A. row matrix B. column matrix C. identity matrix D. scalar matrix
175	The series 3 + 33 + 333 + ... is:	A. A.P B. G.P C. H.P D. none of these
176	$(1 - \sin^2\Theta)(1 + \tan^2\Theta) =$	A. 0 B. 1 C. Θ D. -1
177	Question Image	A. 3:5:2 C. 3:2:1 D. 1:2:3
178	Question Image	
179	Question Image	A. 3×3 B. 3×2 C. 2×1 D. 2×3
180	If 2s = a + b +c, then in any triangle ABC:	D. none of these
181	The period of cosec 3x is:	
182	180° = _____:	D. π radians
183	Question Image	
184	No. of triangles can be formed by joining the vertices of the polygon having 12 sides ?	A. 202 B. 220 C. 110 D. none of these
185	The disjunction of two statements p and q is denoted by:	
186	Question Image	
187	y = tan-1 x if and only if x = tan y, where:	A. -1 < x < 1 and - π < y < π
188	The set of negative integers is closed with respect to:	A. addition B. multiplication C. both (a) and (b) D. subtraction
189	An infinite sequence has no:	A. nth term B. last term C. sum D. none
190	The range of principal tangent function is:	
191	If the sum of the roots of the equation $kx^2 - 2x + 2k = 0$ is equal to their product, then the value of k is:	A. 1 B. 2 C. 3 D. 4
192	The range of $y = \cos^{-1} x$ function is:	
193	Two A.Ms. between 3 and 9 are:	A. 3. 6 B. 5, 7 C. 6, 12 D. 3, 9
194	Question Image	
195	sin (Θ - π) =	
196	$r_2 =$	
197	The trivial solution of the homogeneous linear equations is:	A. (1, 0, 0) B. (0, 1, 0) C. (0, 0, 1) D. (0, 0, 0)

198	The sum of 10 A.Ms between 3 and 47 is:	A. 50 B. 250 C. 100 D. 500
199	If cosec Θ > 0 and cot Θ < 0, then terminal arm of the angle lies in:	A. I B. II C. III D. IV
200	Zero is:	A. a natural number B. a whole number C. a positive integer D. a negativeinteger
201	A sequence is denoted by:	B. $\{a_n\}$ C. a_n D. a_1 + (n-1) d
202	Question Image	B. x = 0, y = 0
203	A set having no element is called:	A. null set B. subset C. singleton D. superset
204	Question Image	A. A B. B
205	Question Image	A. 1 B. 0 C. 2 D. 3
206	If A is a square matrix, then $A + A^t$ is:	
207	The ration of the sum and product of roots of $7x^2$ - 12x + 18 = 0 is:	A. 7:12 B. 2:3 C. 3:2 D. 7:18
208	The graph of $y = \cos^{-1} x$ is obtained by reflecting the graph of y = cos x about:	A. x-axis B. y-axis C. y = x D. y = -x
209	How many complex cube roots of unity are there:	A. 2 B. 0 C. 1 D. 3
210	If A is a square matrix order 3 × 3 the |kA| equals:	A. k |A| B. k^2|A| C. k^3 |A| D. k^4 |A|
211	The middle term of $(x-y)^{18}$ is:	A. 9th B. 10th C. 11th D. none of these
212	$i^2 + 1 =$	A. -1 B. 0 C. i D. 1
213	A numbers exceeds its square root by 6, the number is:	A. 6 B. 3 C. 9 D. none of these
214	Question Image	
215	Question Image	A. 4 B. 16 C. 8 D. 64
216	One of the roots of the equation $3x^2$ + 2x + k = 0 is the reciprocal of the other, then k = ...:	A. 3 B. 2 C. 1 D. 4
217	If the initial side of an angle is the positive x-axis and the vertex is at the origin, the angle is said to be in the _____:	A. initial position B. finalposition C. normalposition D. standardposition

218	Sum of roots of $ax^2 + bx + c = 0$ is equal to product of roots only if:	A. a+c=0 B. b+c=0 C. a+b=0 D. a+b+c=0
219	The value of $^5C_2$ is:	A. 1 B. 10 C. 20 D. 30
220	Probability of a certain event is:	A. 0 B. 1 C. >1 D. ∞
221	cos $(2\sin^{-1} x)$ =	A. 1- 2x² B. 1 + 2x² C. 2x²- 1 D. x²- 1
222	If f(x) = arccos x, then:	
223	Solution set of the equation $x^2 - 3x + 2 = 0$ is	A. {-1, 2} B. {1, -2} C. {-1, -2} D. {1, 2}
224	Question Image	A. A B. B
225	Question Image	D. None
226	Minors and co-factors of the elements in a determinant are equal in magnitude but they may differ in:	A. order B. position C. sign D. symmetry
227	2 cos α sin ß =	A. cos (α + ß) + cos (α - ß) B. sin (α + ß) + sin (α - ß) C. sin (α + ß) - sin (α - ß) D. cos (α + ß) + cos (α - ß)
228	Question Image	
229	Question Image	A. 3 B. -3 C. 1/3 D. -1/3
230	Tan (294°) =	A. tan24° B. -tan24° C. cot24° D. -cot24°
231	Question Image	
232	In $ax^2 + bx + c = 0$, if $b^2 - 4ac > 0$ and perfect square the roots are:	A. rational B. irrational C. equal D. complex
233	The middle term in the expansion of $(a+b)^{20}$ is;	A. 10th term B. 11thterm C. 12thterm D. 13thterm
234	A^{-1} exists if A is:	A. singular B. nonsingular C. symmetric D. none
235	Modulus of 15 i + 20 is:	A. 20 B. 15 C. 25 D. none of the above
236	If tan Θ > 0 and sin Θ < 0 then terminal arm of the angle lies in quadrant:	A. I B. II C. III D. IV
237	Tickets numbered 1 to 20 are mixed up and then a ticket is drawn at random. What is the probability that the ticket drawn bears a number which is a multiple of 3 ?	D. none of these
238	If x is positive or zero, then the principal value of any inverse function of x, if it exists	

238	value of any inverse function of x, if it exists lies in the interval:	
239	The angles 90°±Θ, 180°±Θ, 270°±Θ, 360°±Θ, are the:	A. composite angles B. half angles C. quadrantal angles D. allied angles
240	No. of triangles can be formed by joining the vertices of the polygon having 5 sides ?	A. 10 B. 15 C. 20 D. none of these
241	Question Image	
242	$r_3 =$	
243	The period of tan 3x is:	
244	The ordered pairs (2, 5) and (5, 2) are:	A. not equal B. equal C. disjoint D. empty
245	Numbers are formed by using all the digits 1, 2, 3, 4, 5, 6 on digit being repeated, then the numbers which are divisible by 5 are:	A. 110 B. 120 C. 122 D. 124
246	If sets A and B are equal then:	
247	Cot1°, Cot2°, Cot3°, ... Cot89° =	A. -1 B. 1 C. ∞ D. none
248	Question Image	A. irrational fraction B. polynomial C. rational fraction D. none of these
249	$(1 - \cos^2\Theta)(1 + \cot^2\Theta) =$	A. tan²Θ B. 0 C. 1 D. -1
250	If 2s = a + b + c, then in any triangle ABC:	D. all of these
251	The distance between the points $P(x_1, y_1)$ and $Q(x_2, y_2)$ is:	
252	$\sin(\alpha - \beta) =$	
253	Question Image	
254	(a+b) x = ax + bx is:	
255	{2, 4, 6, 8, ...} represents the set of:	A. positive odd numbers B. natural numbers C. prime numbers D. positive even numbers
256	Which of the following is correct:	A. 2 + 7i > 10 + i B. 1 + i > 1 - i C. 4 + 3i > 1 + 3i D. none of these
257	Question Image	A. A and B are power sets B. A and B are disjoint sets C. A and B are super sets D. A and B are equal sets
258	If a polynomial $P(x) = x^2 + 4x^2 - 2x + 5$ is divided by x - 1, then the reminder is:	A. 8 B. -2 C. 4 D. 5
259	A set can be described by:	A. one way B. two ways C. several ways D. threeways
260	$\tan(\pi + \cot^{-1}x) =$	
261	Question Image	
	Question Image	A. ab - cd = 0 B. ac - bd = 0

262	Question Image	~~D. ad - bc = 0~~ C. ad - bc = 1 D. ad - bc = 0
263	If A is a matrix of order m × n and B is a matrix of order n × p then the order of AB is:	A. p×m B. p×n C. n×p D. m×p
264	In any triangle ABC, law of tangents is:	D. all of these
265	In circular system the angle is measured in:	A. radians B. degrees C. degrees, minutes D. degrees, seconds
266	Number of ways of arranging 5 keys in a circular ring is:	A. 12 B. 24 C. 6 D. 5
267	For a square matrix A, |A| equals:	A. A^t B. $\|A^t\|$ C. $-\|A^t\|$ D. $-A^t$
268	Question Image	A. 3×2 B. 2×3 C. 2×2 D. 3×3
269	No. of signals made by 5 flags of different colors using 3 flags at a time is:	A. 60 B. 15 C. 10 D. None
270	The ordered pairs (4, 5) and (5, 4) are:	A. same B. different C. both a and b D. N
271	If 2s = a + b + c, where a, b, c are the sides of a triangle ABC, then area of triangle ABC is given by:	
272	Sum of integral multiples of there between 4 and 22 is:	A. 81 B. 75 C. 211 D. none
273	Question Image	A. scalarmatrix B. diagonalmatrix C. lower triangularmatrix D. uppertriangularmatrix
274	Conjugate of a + i b is:	A. -a + ib B. a + ib C. -a - ib D. a - ib
275	The range of y = $\sin^{-1}$ x is:	
276	When a rational fraction is separated into partial fractions, the result is:	
277	Question Image	
278	Question Image	
279	A dice is thrown. The probability to get an even number is:	A. 1 D. none of these
280	Question Image	A. Additive property B. Multiplicativeproperty C. Reflexiveproperty D. Transitive property
281	For what value of k, the sum of the roots of the equation x^2 + kx + 4 = 0 is equal to the product of its roots:	A. ±1 B. 4 C. ±4 D. -4
282	Question Image	A. 3 B. 1 C. 4 D. None
283	tan (-135°) =	A. 0 B. 1

		D. √2
284	Arithmetic series is only possible if:	A. |d| = 1 B. |d| < 1 C. |d| > 1 D. none
285	If A = {1, 2, 7, 9}, B = {1, 4, 7, 11}:	A. disjoints sets B. equal sets C. overlapping sets D. complementary sets
286	Which number cannot be a term of a geometric sequence ?	A. 0 B. 1 C. -1 D. r
287	Question Image	A. p is false and q is true B. both p and q are false C. p is true and q is false D. both p and q are true
288	sin5Θ + sin3Θ is equal to:	A. 2cos 2Θ sin Θ B. -2 cos 4Θ sin Θ C. -2 sin 4Θ cos Θ D. 2 sin 4Θ cos Θ
289	Question Image	
290	Solution set of the simultaneous equations : x + y = 1, x - y = 1 is:	A. {(0,0)} B. {(1,0)} C. {(0,1)} D. {(1,1)}
291	A die is rolled. The probability that the dots on the top are greater than 4 is:	A. 5, 6 D. 1
292	Question Image	A. A B. B
293	Equations having a common solution are called:	A. linear B. quadratic C. homogeneous D. simultenaeous
294	The period of cos 2x is:	
295	The number of diagonals of a polygon with n sides is:	D. none of these
296	Probability of an impossible event is:	A. 0 B. 1 C. -1 D. ∞
297	Question Image	
298	Question Image	A. x-axis B. y-axis C. y = x D. y = -x
299	Product of a complex number and its conjugate is:	A. a real number B. irrationalnumber C. a complexnumber D. either real number or complexnumber
300	2 cos α cos ß =	A. sin (α + ß) - sin (α - ß) B. cos (α + ß) - cos (α - ß) C. cos (α + ß) + cos (α - ß) D. sin (α + ß) + sin (α - ß)
301	The quadrant of an angle Θ is determined by its:	A. sign B. value C. ratio D. magnitude
302	Question Image	
303	Question Image	A. closure property w.r.t multiplication B. commutativeproperty w.r.t multiplication C. associativeproperty w.r.t multiplication D. trichotomy property
304	Question Image	
305	Question Image	B. diagonal matrix

306	To convert any angle in degrees into radians, we multiply the measure by:	
307	Question Image	
308	Inverse of an element in a group is:	A. infinite B. finite C. unique D. not possible
309	B - A is a subset of:	A. A B. B
310	If the matrices A & B have the orders 2×3 and 5×2 then order BA is:	A. 3×5 B. 5×2 C. 2×2 D. none
311	What is called the arrangement of numbers formed according to some definite rule ?	A. arithmetic sequence B. geometricsequence C. sequence D. none of these
312	Question Image	A. 40 B. -40 C. 26 D. -26
313	The system of measurement in which the angle is measured in degrees, and its sub-units, minutes and seconds is called the:	A. circular system B. sexagesimal system C. decimal system D. degree system
314	A geometric series is convergent only if:	A. | r | > 1 B. | r | < 1 C. | r | = 1 D. none of these
315	$\tan^{-1}(-\sqrt{3})$ is:	
316	Question Image	A. 1 B. -5 C. -1 D. none
317	If $\sin\Theta <0$, $\cos\Theta<0$ then the terminal arm of the angle lies in quadrant:	A. I B. II C. III D. IV
318	No. of arrangements of the letters of the word plane taking all letters at a time:	A. 5 B. 1 D. none
319	The number of radius in the angle subtended by an arc of a circle at the center =	A. radius × arc B. radius - arc
320	A reference angle Θ is always:	
321	Question Image	A. A.P B. G.P C. H.P D. none
322	If α, ß, Γ are the angles of a oblique triangle, then:	A. α = 90° B. ß = 90° C. Γ = 90° D. none of these
323	Question Image	
324	Graphs of trigonometric function within their domains are:	A. line segments B. sharp corners C. broken lines D. smooth curves
325	Conjugate of a- i b is:	A. b + ia B. -a + ib C. -a - ib D. a + ib
326	The solution set of $\sin\Theta$, $\cos\Theta = 1$ in $[0, 2\pi]$ is _____:	A. 0 C. solution does not exist
327	A compound statement of the form "if p then	A. tautology B. conditional

327	q" is called an:	C. consequent D. absurdity
328	The solution set of 2cosΘ + √3 = 0 is:	A. finite set B. infinite set
329	Question Image	
330	The middle term in the expansion of $(1+x)^{1/2}$ is:	A. T_2 B. T_3 C. does not exist D. none of these
331	Question Image	A. p is false and q is true B. both p and q are false C. p is true and q is false D. both p and q are true
332	Question Image	A. - cot Θ B. - tan Θ C. tan Θ D. none of these
333	Division of a natural number by another natural number gives:	A. always a natural number B. always an integer C. always a rationalnumber D. always an irrational number
334	Question Image	A. 9 B. -9 C. -6 D. none
335	Period of a trigonometric function is:	A. any real number B. any negative real number C. any integer D. a least positive number
336	If a set is described in words, the method is called:	A. tabular form B. descriptiveform C. set builder notation D. non-tabular method
337	There is a solution of the equation 2 sin Θ + 1 = 0 in the quadrants:	A. 1 and 2 B. 1 and 3 C. 2 and 4 D. 3 and 4
338	Question Image	
339	A biconditional is written in symbols as:	
340	Question Image	A. 5 B. -5 C. -4 D. 4
341	In a simultaneous throw of two dice, The probability of getting a total of 7 is:	
342	$5x^2 + 8x + 3 = 0$ is:	
343	The period of cot 2x is:	
344	With usual notations for triangle R equals:	
345	No. of signals made by 4 flags of different colors using 2 flags at a time:	A. 6 B. 12 C. 60 D. none
346	In how many ways two places can be filled by n objects:	A. n(n-1) B. 2! C. n(n+1) D. None
347	Rational numbers are:	A. repeating decimals B. terminatingdecimals C. periodicdecimals D. all of these
348	If sin α < 0 and cos α > 0, then α lies in:	A. I B. II C. III D. IV
349	The period of cot x is:	

350	Question Image	D. none of these
351	If P(x) is a polynomial of degree m and Q(x) is a polynomial of degree n, the quotient P(x) + Q(x) will produce a polynomial of degree:	A. m . n, plus a quotient B. m - n, plus a remainder C. m ÷ n, plus a factor D. m + n, plus a remainder
352	1 radian is equal to:	C. 180° D. none of these
353	For a positive integer n:	A. $(n+1)! = (n+1)n!$ B. $(n+1)! = (n+1)(n-1)!$ C. $n! = n(n+1)!$ D. none of these
354	Question Image	
355	If S is the H.M between 2 and b then b = :	A. -10 B. 10 C. 7 D. 5
356	csc (2π - Θ), where Θ is a basic angle, will have terminal side in:	A. quad. I B. quad. II C. quad. III D. quad. IV
357	Question Image	A. 3×1<!--[if gte msEquation 12]><m:oMathPara><m:oMath><m:d><m:dPr><m:begChr m:val="["/><m:endChr m:val="]"/><m:ctrlPr></m:ctrlPr></m:dPr><m:e><m:m> <m:mPr><m:mcs><m:mc><m:mcPr><m:count m:val="1"/><m:mcJc m:val="center"/> </m:mcPr></m:mc></m:mcs><m:ctrlPr></m:ctrlPr></m:mPr><m:mr><m:e></m:e></m:mr><m:mr> <m:e></m:e></m:mr><m:mr><m:e></m:e></m:mr></m:m></m:e></m:d></m:oMath> </m:oMathPara><![endif]--><!--[if !msEquation]--><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 joinstyle="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:f></v:f></v:f> </v:f></v:f></v:f></v:f></v:f></v:f></v:f></v:f></v:f></v:formulas><v:path o:extrusionok="f" gradientshapeok="t" o:connecttype="rect"><o:lock v:ext="edit" aspectratio="t"></o:lock> </v:path></v:stroke></v:shapetype><v:shape id="_x0000_i1025" type="#_x0000_t75" style="width:27.75pt; height:61.5pt"><v:imagedata src="file:///C:\Users\Campus.pk\AppData\Local\Temp\msohtmlclip1\01\clip_image001.png" o:title="" chromakey="white"></v:imagedata></v:shape><!--[endif]--> B. 1×3 C. 3×3 D. 1×1
358	Question Image	D. all of these
359	The additive inverse of a matrix A is:	A. A B. A^{-1} C. - A D. A^2
360	The period of sec x is:	
361	No. of ways of solving a quadratic equation:	A. 1 B. 3 C. 2 D. 4
362	No. of selection of n different things out of n is:	A. 1 B. n C. n! D. none
363	Question Image	A. x = 0 B. y = 0 C. x = 0 and y = 0 D. x = 0 or y = 0

364	No. of diagonals can be formed by joining the vertices of the polygon having 5 sides ?	A. 5 B. 15 C. 51 D. 10
365	Question Image	A. A B. B
366	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 tat f (x + p) = _____ :	A. f (p) B. x + p C. 0 D. f(x)
367	Question Image	
368	Question Image	
369	Question Image	A. scalar matrix B. diagonalmatrix C. lower triangularmatrix D. upper triangularmatrix
370	A.M between $1 + x - x^2$ and $1 + x + x^2$ is:	A. $1 + x^2$ B. $1 + x$ C. 2 D. none
371	$\cos(\tan^{-1}\infty) =$	A. 0 B. ∞ C. 1
372	General angles of inverse trigonometric functions are written by using their:	A. Domain B. Range C. Periodicity D. Quadrants
373	Number of terms in the expansion of $(a+b)^n$ is:	A. n B. n+1 C. n-1 D. none of these
374	In any triangle ABC, law of sines is:	
375	The next term of the sequence 1, 6, 20, 56, ... is:	A. 112 B. 144 C. 212 D. none
376	Domain of the function $y = \tan^{-1} x$ is:	
377	Question Image	A. linear equation B. Quadraticequation C. cubicequation D. radicalequation
378	To convert any angle in radians into degrees, we multiply the measure by:	
379	7th term of G.P 3, 6, 12 ..... is:	A. 512 B. 192 C. 48 D. 96
380	If a set is described by listing its elements within brackets is called:	A. set builder notation B. tabular form C. descriptive method D. none of these
381	Question Image	A. integer B. rational number C. irrational number D. natural number
382	Question Image	A. T_6 B. T_7 C. T_8 D. T_5
383	[0] is a:	
384	S = {1, -1, 2, -2} is a group under:	A. multiplication B. subtraction C. addition D. none of these
385	Question Image	

386	A dice is thrown. The probability to get an odd number is;	A. 1 D. none of these
387	n! stands for:	A. product of first natural numbers B. sum of n natural numbers C. product of n integers D. none of these
388	To draw general conclusions from well-known facts is called:	A. logic B. proposition C. induction D. deduction
389	Question Image	A. {1, 2, 3} B. {5, 6, 7} C. {4}
390	A - B is a subset of:	A. A B. B
391	If sin Θ + cosec Θ = 2, then sin^2 Θ + cosec^2 Θ =	A. 2 B. 4 C. 0 D. 8
392	Sum of all four fourth roots of unity is:	A. 1 B. 0 C. -1 D. 3
393	Question Image	
394	The circum-radius R of a triangle is given by:	
395	If a matrix A is symmetric as well as skew symmetric, then:	A. A is null matrix B. A is unit matrix C. A is triangular matrix D. A is diagonal matrix
396	The roots of the equation 25x^2 - 30x + 9 = 0 are;	A. rational B. irrational C. equal D. complex
397	Question Image	A. 2x B. x^2 C. 1 D. none of these
398	The area of a sector of a circular region of radius r with length of the arc of the sector equal to s is-----------:	A. rΘ B. rs
399	A matrix in which each element is 0 is called:	
400	If two sets have no element common, they are called:	A. disjoint B. over lapping C. dissimilar D. exhaustive
401	Question Image	
402	$^nC_4 = {^nC_8}$ then n = :	A. 4 B. 12 C. 8 D. 6
403	The number of ways in which fiver persons can sit at a round table is:	A. 4! B. 5! D. none of these
404	Question Image	
405	Given tan Θ = 1	A. Θ lies in quadrants 1 and 4 B. cos Θ = √2
406	Question Image	
407	Question Image	
408	What is the common difference of the sequence 11, 5, -1, ... ?	A. 6 B. -6 D. none of the foregoing numbers
409	The conjunction of two statements p and q is denoted by:	

#	Question	Options
410	$2 \sin 12° \sin 46° =$	A. $\cos 34° + \cos 58°$ B. $\sin 34° - \sin 58°$ C. $\sin 34° + \sin 58°$ D. $\cos 34° - \cos 58°$
411	If the sum of the roots of $ax^2 - (a + 1)x + (2a + 1) = 0$ is 2, then the product of the roots is:	A. 1 B. 2 C. 3 D. 4
412	Question Image	A. 0
413	In a triangle if $\alpha > 45°$, $\beta > 30°$ then Γ cannot be:	A. 90° B. 100° C. 120° D. 10°
414	The amplitude and period of $3 \sin x$ are:	A. 3, π B. 2, 2π C. 3, 3π D. 3, 2π
415	Sum of all three cube roots of unity is:	A. 1 B. -1 C. 0 D. 3
416	Question Image	
417	The domain of principal tangent function is:	
418	Question Image	A. A is superset of B B. B is superset of A C. A is subset of B D. A is equivalent to B
419	Multiplicative inverse of -i is:	A. i B. -i C. 1 D. -1
420	The domain of $y = \sin^{-1} x$ is:	
421	Question Image	
422	Question Image	
423	Question Image	
424	$\sin^{-1}(-x) =$	A. $-\sin^{-1} x$ B. $\sin^{-1} x$ C. $\pi + \cos^{-1} x$ D. $-\cos^{-1} x$
425	The reciprocal of the terms of A.P. form:	A. A.P B. G.P C. H.P D. none of these
426	Question Image	
427	If the roots of $x^2 - bx + c = 0$ are two consecutive integers, then: $b^2 - 4ac =$	A. 0 B. 1 C. -1 D. 2
428	If $^nP_2 = 30$ then $n = $:	A. 5 B. 6 C. 2 D. 3
429	In triangle ABC, If $\Gamma = 90°$ then:	D. $b = c + a$
430	Amplitude of $\sin x$ is:	A. R B. [-1,1] C. 0 D. 1
431	Question Image	
432	If a statement P(n) is true for n = 1 and truth of P(n) for n = k implies the truth of P(n) for n = k + 1, then P(n) is true for all:	A. integers n B. real numbers n C. positive real numbers n D. positive integers n
		A. set builder notation

433	Question Image	B. tabular form C. descriptive method D. non-set builder method
434	If S is a sample space and event E is S then P(E) is:	A. 0 B. 1 C. >1 D. none
435	The period of 2 + cos 3x is:	
436	The factorial of positive integer is:	A. rational no. B. positive integer C. real no. D. none
437	The identity element with respect to addition is:	A. 0 B. 1 C. -1 D. 0 and 1
438	Question Image	A. cos x B. sec x
439	Question Image	
440	Question Image	
441	sec (2π + Θ), where Θ is a basic angle will have terminal side in:	A. quad. I B. quad. II C. quad. III D. quad. IV
442	If s denotes the length of the arc intercepted on a circle of radius r by a central angle of α radians, then:	A. s = rα B. s = r + α D. none of these
443	Which one is radical equation:	A. $ax^2 + bx + c$ B. ax + b = 0 D. 2^x = 16
444	For what value of k, the roots of the equation $x^2 + \sqrt{k}\, x + 2 = 0$ are equal:	A. 1 B. 8 C. 2 D. 4
445	The domain of principal sine function is:	
446	If A = [aij] and B = [bij] are two matrices of same order r × s, then order of A - B is:	A. r - s B. r × s C. r + s D. none of these
447	A.M between x - 3 & x + 5 is _____:	A. x + 1 B. x - 1 C. 2x + 2 D. none
448	The in-radius r of a triangle is given by:	
449	The roots of the equation:	A. complex B. irrational C. rational D. none of these
450	sin (α + ß) =	
451	Question Image	
452	Number of digits multiple of 5 made from the digits 2, 3, 5, 7, 9 is:	A. 5 B. 24 C. 20 D. none
453	Question Image	A. integer B. rationalnumber C. irrationalnumber D. naturalnumber
454	A sequence of numbers whose reciprocal form an arithmetic sequence, is known as:	A. arithmetic sequence B. geometricsequence C. harmonicsequence D. none of these
455	Question Image	
	A clock strikes once when its hour hand is	A. 55

456	at one, twice when it is at two, and so on. How many times does the clock strike in ten hours ?	B. 78 C. 66 D. 46
457	The domain of $y = \cos^{-1} x$ function is:	
458	Number of terms in the expansion of $(x+y)^6$ is:	A. 7 B. 6 C. 2 D. 8
459	Truth table containing all the values true is called:	A. absurdity B. conjunction C. tautology D. none
460	If A is a square matrix, then:	A. $\lvert A^t \rvert = A$ B. $\lvert A^t \rvert = -A$ C. $\lvert A^t \rvert = \lvert A \rvert$ D. $A^t = A$
461	If the elevation of the sun is 30°, the length of the shadow cast by a tower of 150m height is:	D. none
462	In any triangle ABC, law of cosines is:	
463	If each element of a 3 × 3 matrix A is multiplied by 3, then the determinant of the resulting matrix is:	A. $\lvert A \rvert^3$ B. $27\lvert A \rvert$ C. $3\lvert A \rvert$ D. $9\lvert A \rvert$
464	The identity element in a group is:	A. unique B. inifinite C. both a and b D. not possible
465	A key ring is an example of:	A. permutation B. circulation permutation C. combination D. none
466	If $\sin \alpha = \cos \beta$ in any triangle ABC then:	A. $\alpha + \beta = 90°$ B. $\alpha + \beta = 180°$ C. $\alpha + \beta = 360°$ D. $\alpha + \beta$
467	Question Image	B. archimedean property C. transitive property D. multiplicative property
468	If α, β are complex cube roots of unity, then $1 + \alpha^n + \beta^n = \ldots\ldots$ where n is a positive integer divisible by 3:	A. 1 B. 3 C. 2 D. 4
469	The other name of quadratic equation is:	A. linear equation B. 1st degree equation C. 2nd degree equation D. none
470	$y = \sin^{-1} x$ if and only if $x = \sin y$, where:	
471	To draw general conclusions from a limited number of observations is called:	A. logic B. proposition C. induction D. deduction
472	Question Image	A. $a + c = b + d$ B. $a + b = c + d$ C. $a - b = c - d$ D. None of these
473	Which one is a quadrant angle ?	A. 60° B. 180° C. 120° D. 30°
474	Question Image	
475	- 72° = _____ :	D. none of these
476	$(x + 3)(x + 4) = x2 + 7x + 12$ is:	
477	In a triangle ABC, $(s - a)(s - b) = s(s - c)$, then the angle $\Gamma =$	
		A. 30°

478	Question Image	B. 45° C. 60° D. 75°
479	No. of diagonals can be formed by joining the vertices of the polygon having 12 sides ?	A. 70 B. 54 C. 70 D. 73
480	Question Image	
481	The next term of the sequence-1, 2, 12, 40, ...is:	A. 112 B. 212 C. 144 D. none
482	Question Image	A. z is purely real B. z is any complex number C. z is purely imaginary D. real part of z = imaginary part of z
483	Fifth term of the sequence 2, 6, 11, 17.	A. 24 B. 41 C. 32
484	Question Image	A. 0 B. 2 C. 1 D. 3
485	In binomial expansion of $(a+b)^n$, n is positive integer the sum of odd coefficients equals:	D. none of these
486	The period of tan x is:	
487	Question Image	
488	The multiplicative invers of a non-zero real number a is:	A. 0 B. -a C. a
489	In an A.P.a_3 = 12 and a_7 = 32 then d = :	A. 5 B. 3 C. 7 D. 9
490	Question Image	A. equal sets B. null sets C. overlapping sets D. subsets
491	If a_{n-3} = 2n - 5 then a_n =	A. 2n-1 B. 2n+1 C. 2n+3 D. none
492	If a_{n-1} = 2n - 3 then a_{n+1} =	A. 2n - 1 B. 2n + 1 C. 2n + 3 D. none
493	Question Image	D. diagonal matrix
494	Question Image	
495	Question Image	A. 0 B. 4 C. 1 D. 3
496	Question Image	A. quad. I B. quad. II C. quad. III D. quad. IV
497	Range of the function $y = \tan^{-1} x$ is:	
498	No. of arrangements of the letters of the word PAKPATTAN can be made, taken all together ?	A. 15130 B. 15120 C. 1512 D. none of these
499	The set of all rational numbers between 2, 3 is:	A. an empty set B. an infinite set C. a finite set D. a power set

500	Question Image	A. 2 B. -2 C. 5 D. -5
501	In triangle ABC, if α = 90° then:	D. none of these
502	In a simultaneous throw of two dice, The probability of getting sum 3 or 11 is:	D. none
503	2 sin α cos ß =	A. sin (α + ß) - sin (α - ß) B. cos (α + ß) + cos (α - ß) C. sin (α + ß) + sin (α - ß) D. cos (α + ß) - cos (α - ß)
504	If AB = BA = I, then A and B are:	A. equal to each other B. multiplicative inverse of each other C. additive inverse of each other D. both singular
505	cos (α-ß) =	A. cos α cos ß + sin α sin ß B. cos α cos ß - sin α sin ß C. cos α cos ß + sin α cos ß D. sin α cos ß - sin α sin ß
506	The domain of principal cosine function is:	
507	$\tan(\pi + \tan^{-1}x) =$	A. x B. π+x C. π-x D. none of these
508	In a triangle ABC if $a^2 - b^2 + c^2 = ac$ then < ß =	