Mathematics Fsc Part 1 Online Test

Sr	Questions	Answers Choice
1	Question Image	A. rational number B. irrational number C. natural number D. whole number
2	Question Image	A. rationalnumber B. irrationalnumber C. naturalnumber D. wholenumber
3	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
4	Question Image	A. integer B. rationalnumber C. irrationalnumber D. naturalnumber
5	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
6	Irrational numbers are:	A. terminating decimals B. non-terminating decimals C. non-terminating, repeating decimals D. non-terminating, non repeating
7	Rational numbers are:	A. repeating decimals B. terminatingdecimals C. periodicdecimals D. all of these
8	π, e are:	A. integers B. natural numbers C. rationalnumbers D. irrationalnumbers
9	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
10	Zero is:	A. a natural number B. a whole number C. a positive integer D. a negativeinteger
11	Question Image	A. integer B. rational number C. irrational number D. natural number
12	The set of negative integers is closed with respect to:	A. addition B. multiplication C. both (a) and (b) D. subtraction
13	Question Image	A. x = 0 B. y = 0 C. x = 0 and y = 0 D. x = 0 or y = 0
14	Question Image	A. a + c = b + d B. a + b = c + d C. a - b = c - d D. None of these
15	Question Image	A. Additive property B. Multiplicativeproperty C. Reflexiveproperty D. Transitive property

16	Question Image	A. additive property B. multiplicative inverseproperty C. transitive property D. negative property
17	Question Image	A. Reflexive property B. Symmetricproperty C. Transitiveproperty D. Trichotomyproperty
18	Question Image	A. cancellation property w.r.t multiplication B. cancellationproperty w.r.t addition C. multiplicativeproperty D. additiveproperty
19	Question Image	A. closure property w.r.t multiplication B. commutativeproperty w.r.t multiplication C. associativeproperty w.r.t multiplication D. trichotomy property
20	Question Image	A. closureproperty B. associativeproperty C. commutativeproperty D. trichotomyproperty
21	Question Image	
22	Question Image	
23	Question Image	
24	Question Image	B. archimedean property C. transitive property D. multiplicative property
25	Question Image	A. real numbers B. complexnumbers C. primenumbers D. oddnumbers
26	The real part of the complex number a + bi is:	A. b B. -b C. a D. -a
27	The imaginary part of the complex number a + bi is:	A. a B. b C. bi D. none of these
28	Product of a complex number and its conjugate is:	A. a real number B. irrationalnumber C. a complexnumber D. either real number or complexnumber
29	The ordered pairs (2, 5) and (5, 2) are:	A. not equal B. equal C. disjoint D. empty
30	Conjugate of complex number (-a, -b) is:	A. (-a, b) B. (-a, -b) C. (a, -b) D. none of these
31	Conjugate of a + i b is:	A. -a + ib B. a + ib C. -a - ib D. a - ib
32	Conjugate of a- i b is:	A. b + ia B. -a + ib C. -a - ib D. a + ib
33	Conjugate of -3 -2 i is:	A. 3 + 2i B. -3 + 2i C. 2 + 3i D. -2 + 3i
34	$i^2 + 1 =$	A. -1 B. 0 C. i D. 1
		A. integer B. rational number

35	Every real number is also a/an:	B. rational number C. irrationalnumber D. complexnumber
36	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
37	The identity element with respect to addition is:	A. 0 B. 1 C. -1 D. 0 and 1
38	The additive inverse of a real number is a:	A. 0 B. -a C. a
39	The multiplicative invers of a non-zero real number a is:	A. 0 B. -a C. a
40	Multiplicative inverse of -i is:	A. i B. -i C. 1 D. -1
41	The multiplicative identity of real numbers is:	A. 0 B. 1 C. 2 D. -1
42	Modulus of 15 i + 20 is:	A. 20 B. 15 C. 25 D. none of the above
43	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
44	Distinct objects means:	A. identical objects B. not identical C. similar D. none of these
45	The objects in a set are called:	A. elements B. sub-sets C. whole numbers D. overlapping sets
46	A set can be described by:	A. one way B. two ways C. several ways D. threeways
47	If a set is described in words, the method is called:	A. tabular form B. descriptiveform C. set builder notation D. non-tabular method
48	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
49	Question Image	A. set builder notation B. tabular form C. descriptive method D. non-set builder method
50	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
51	A set having no element is called:	A. null set B. subset C. singleton D. superset
52	A set containing finite number of elements is called:	A. nullset B. superset C. finiteset D. infiniteset
53	If A = {1, 2, 7, 9}, B = {1, 4, 7, 11}:	A. disjoints sets B. equal sets C. overlapping sets

		D. complementary sets
54	{2, 4, 6, 8, ...} represents the set of:	A. positive odd numbers B. natural numbers C. prime numbers D. positive even numbers
55	If two sets have no element common, they are called:	A. disjoint B. over lapping C. dissimilar D. exhaustive
56	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
57	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
58	Question Image	A. A B. B
59	Question Image	A. A B. B
60	A - B is a subset of:	A. A B. B
61	B - A is a subset of:	A. A B. B
62	Question Image	A. B B. A D. none of these
63	Question Image	A. A B. B
64	If n(S) = 3 then n {P(S)} =	A. 2 B. 8 C. 16 D. 4
65	The number of subsets of a set having three elements is:	A. 2 B. 3 C. 4 D. 8
66	A compound statement of the form "if p then q" is called an:	A. tautology B. conditional C. consequent D. absurdity
67	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
68	To draw general conclusions from a limited number of observations is called:	A. logic B. proposition C. induction D. deduction
69	To draw general conclusions from well-known facts is called:	A. logic B. proposition C. induction D. deduction
70	A declarative statement which is either true or false but not both is called:	A. logic B. proposition C. induction D. deduction
71	A biconditional is written in symbols as:	
72	Question Image	
73	Question Image	
74	Question Image	
75	Truth table containing all the values true is called:	A. absurdity B. conjunction C. tautology D. none

		D. none
76	Question Image	
77	Question Image	
78	The conjunction of two statements p and q is denoted by:	
79	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
80	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
81	The disjunction of two statements p and q is denoted by:	
82	The ordered pairs (4, 5) and (5, 4) are:	A. same B. different C. both a and b D. N
83	A groupoid (S) is called _____ if it is associative in S:	A. group B. abelian-group C. semi-group D. associative-group
84	Inverse of an element in a group is:	A. infinite B. finite C. unique D. not possible
85	The identity element in a group is:	A. unique B. inifinite C. both a and b D. not possible
86	If (x - 2, 2) = (3, 2), then:	A. x = 5 B. x = 2 C. x = -5 D. x = 3
87	Question Image	A. 2 B. 4 C. 6 D. 8
88	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
89	Question Image	A. 3×3 B. 3×2 C. 2×1 D. 2×3
90	A matrix of order m×1 is called:	A. row matrix B. column matrix C. identity matrix D. scalar matrix
91	Question Image	
92	Question Image	
93	Question Image	
94	[0] is a:	
95	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
96	Question Image	D. diagonal matrix
97	Question Image	A. 1 B. -1 C. -6 D. 6
		A. 5

98	Question Image	B. -5 C. -4 D. 4
99	The additive inverse of a matrix A is:	A. A B. A⁻¹ C. - A D. A²
100	Question Image	D. None
101	Question Image	B. diagonal matrix
102	Question Image	A. singular B. non-singular C. rectangular D. null
103	A matrix in which each element is 0 is called:	
104	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
105	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
106	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
107	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="]"/><span style='font-size:16.0pt;mso-ansi-font-size: 16.0pt;mso-bidi-font-size:16.0pt;font-family:"Cambria Math","serif"; mso-ascii-font-family:"Cambria Math";mso-fareast-font-family:"Times New Roman"; mso-fareast-theme-font:minor-fareast;mso-hansi-font-family:"Cambria Math"; mso-bidi-font-family:"Calibri Light";mso-bidi-theme-font:major-latin; color:#202124;background:white;font-style:italic;mso-bidi-font-style:normal'><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><span style='font-size:16.0pt;mso-ansi-font-size:16.0pt;mso-bidi-font-size: 16.0pt;font-family:"Cambria Math","serif";mso-ascii-font-family:"Cambria Math"; mso-fareast-font-family:"Times New Roman";mso-fareast-theme-font:minor-fareast; mso-hansi-font-family:"Cambria Math";mso-bidi-font-family:"Calibri Light"; mso-bidi-theme-font:major-latin;color:#202124;background:white; font-style:italic;mso-bidi-font-style:normal'><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:mr><m:e></m:e></m:mr></m:m></m:e></m:d></m:oMath></m:oMathPara><![endif]--><!--[if !msEquation]--><span style="font-size:11.0pt;line-height:150%;font-family:"Calibri","sans-serif"; mso-ascii-theme-font:minor-latin;mso-fareast-font-family:SimSun;mso-hansi-theme-font: minor-latin;mso-bidi-font-family:Arial;mso-bidi-theme-font:minor-bidi; mso-ansi-language:EN-US;mso-fareast-language:EN-US;mso-bidi-language:AR-SA"><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: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
108	Question Image	A. 3×2 B. 2×3 C. 2×2 D. 3×3
109	If A is a square matrix, then A + A^t is:	
110	If A is a square matrix, then A - A^t is:	
111	If A and B are two matrices, then:	A. A B = O B. AB = BA C. AB = I D. AB may not be defined
112	Question Image	D. diagonal matrix

113	Question Image	A. ab - cd = 0 B. ac - bd = 0 C. ad - bc = 1 D. ad - bc = 0
114	If A is non singular matrix then A^t is:	A. singular B. nonsingular C. symmetric D. none
115	Question Image	A. zero B. non-singular C. singular D. none of these
116	A^{-1} exists if A is:	A. singular B. nonsingular C. symmetric D. none
117	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
118	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
119	Question Image	A. 1 B. -5 C. -1 D. none
120	Question Image	A. 40 B. -40 C. 26 D. -26
121	Question Image	A. 2 B. -2 C. 5 D. -5
122	Question Image	A. 5 B. 14 C. 20 D. 6
123	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
124	Question Image	A. 3 B. -3 C. 1/3 D. -1/3
125	Question Image	A. 9 B. -9 C. -6 D. none
126	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
127	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
128	If A is a square matrix, then:	A. |A^t| = A B. |A^t| = -A C. |A^t| = |A| D. A^t= A
129	Question Image	A. scalar matrix B. diagonalmatrix C. lower triangularmatrix D. upper triangularmatrix
130	Question Image	A. scalarmatrix B. diagonalmatrix C. lower triangularmatrix D. uppertriangularmatrix

131	Question Image	A. scalar matrix B. diagonalmatrix C. triangularmatrix D. none of these
132	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
133	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)
134	No. of ways of solving a quadratic equation:	A. 1 B. 3 C. 2 D. 4
135	The other name of quadratic equation is:	A. linear equation B. 1st degree equation C. 2nd degree equation D. none
136	Solution set of the equation $x^2 - 3x + 2 = 0$ is	A. {-1, 2} B. {1, -2} C. {-1, -2} D. {1, 2}
137	Question Image	A. c = 0 B. b = 0, c = 0
138	Which one is radical equation:	A. ax² + bx + c B. ax + b = 0 D. 2^x = 16
139	Which one is exponential equation:	A. ax² + bx + c = 0 B. ax + b = 0 D. 2^x = 16
140	If $4^x = 2$, then x equals:	A. 2 B. 1
141	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
142	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
143	One of the roots of the equation 3x2 + 2x + k = 0 is the reciprocal of the other, then k = ...:	A. 3 B. 2 C. 1 D. 4
144	Question Image	A. quadratic equation B. reciprocal equation C. exponential equation D. none of these
145	$3^{2x} - 3^x - 6 = 0$ is:	A. reciprocal equation B. exponentialequation C. radicalequation D. none of these
146	If α, ß are complex cube roots of unity, then $1 + \alpha^n + ß^n$ = ... where n is a positive integer divisible by 3:	A. 1 B. 3 C. 2 D. 4
147	If α, ß are the roots of $x^2 + kx + 12=0$ such that α-ß = 1 then K = :	A. 0 B. ±5 C. ±7 D. ±15
148	The roots of the equation:	A. complex B. irrational C. rational D. none of these
149	Complex roots of real quadratic equation always occur in:	A. conjugate pair B. ordered pair C. reciprocal pair D. none of these

150	How many complex cube roots of unity are there:	A. 2 B. 0 C. 1 D. 3
151	Sum of all three cube roots of unity is:	A. 1 B. -1 C. 0 D. 3
152	Sum of all four fourth roots of unity is:	A. 1 B. 0 C. -1 D. 3
153	If a polynomial P(x) = x2 + 4x2 - 2x + 5 is divided by x - 1, then the reminder is:	A. 8 B. -2 C. 4 D. 5
154	Synthetic division is a process of:	A. division B. subtraction C. addition D. multiplication
155	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
156	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
157	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
158	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
159	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
160	Question Image	A. linear equation B. Quadraticequation C. cubicequation D. radicalequation
161	If the Discriminant of a quadratic equation is a perfect square, then roots are:	A. real and equal B. complex C. rational D. irrational
162	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
163	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
164	The roots of the equation $25x^2 - 30x + 9 = 0$ are;	A. rational B. irrational C. equal D. complex
165	Equations having a common solution are called:	A. linear B. quadratic C. homogeneous D. simultenaeous
166	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)}
167	A numbers exceeds its square root by 6, the number is:	A. 6 B. 3 C. 9

		D. none of these
168	When a rational fraction is separated into partial fractions, the result is:	
169	Question Image	
170	Question Image	D. 20
171	(a+b) x = ax + bx is:	
172	(x + 3) (x + 4) = x2 + 7x + 12 is:	
173	x2 - 5x + 6 = 0 is:	
174	$5x^2 + 8x + 3 = 0$ is:	
175	Question Image	A. irrational fraction B. polynomial C. rational fraction D. none of these
176	Question Image	
177	Question Image	
178	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
179	Question Image	
180	Question Image	
181	Question Image	
182	Question Image	
183	Question Image	
184	Question Image	
185	Question Image	D. all of these
186	Question Image	
187	Question Image	A. 3 B. 1 C. 4 D. None
188	Sequences are also called:	A. Series B. Progressions C. Means D. Convergence
189	A function whose domain is the set of natural numbers is called the:	A. series B. sequence C. means D. convergent
190	A sequence is denoted by:	B. {a_n} C. a_n D. a₁ + (n-1) d
191	Domain of finite sequence is:	A. set of natural numbers B. subset of N C. R D. none
192	An infinite sequence has no:	A. nth term B. last term C. sum D. none
193	What is called the arrangement of numbers formed according to some definite rule ?	A. arithmetic sequence B. geometricsequence C. sequence D. none of these
194	Fifth term of the sequence 2, 6, 11, 17.	A. 24 B. 41 C. 32

195	The next term of the sequence 1, 6, 20, 56, ... is:	A. 112 B. 144 C. 212 D. none
196	The next term of the sequence-1, 2, 12, 40, ...is:	A. 112 B. 212 C. 144 D. none
197	What is the next term in the sequence 10, 7, 4, 1.....?	A. 2 B. -2 C. -3 D. none of these
198	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
199	Two A.Ms. between 3 and 9 are:	A. 3. 6 B. 5, 7 C. 6, 12 D. 3, 9
200	Arithmetic series is only possible if:	A. |d| = 1 B. |d| < 1 C. |d| > 1 D. none
201	What is the general term of the sequence 2, 4, 6, 8, ... ?	A. 2n B. n + 1 C. 2n² D. none of these
202	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
203	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
204	If $a_{n-1} = 2n - 3$ then a_{n+1} =	A. 2n - 1 B. 2n + 1 C. 2n + 3 D. none
205	If $a_{n-3} = 2n - 5$ then a_n =	A. 2n-1 B. 2n+1 C. 2n+3 D. none
206	What is the common difference of the sequence 11, 5, -1, ... ?	A. 6 B. -6 D. none of the foregoing numbers
207	In an A.P.$a_3 = 12$ and $a_7 = 32$ then d = :	A. 5 B. 3 C. 7 D. 9
208	A.M between x - 3 & x + 5 is _____:	A. x + 1 B. x - 1 C. 2x + 2 D. none
209	A.M between 1 + x - x^2 and 1 + x + x^2 is:	A. 1 + x² B. 1 + x C. 2 D. none
210	The sum of 10 A.Ms between 3 and 47 is:	A. 50 B. 250 C. 100 D. 500
211	Sum of all odd numbers between 100 and 200 is:	A. 6200 B. 6500 C. 3750 D. 7500
212	Sum of all positive integral multiples of 3 less than 100 is:	A. 950 B. 760 C. 1230 D. 875

213	Sum of integral multiples of there between 4 and 22 is:	A. 81 B. 75 C. 211 D. none
214	A clock strikes once when its hour hand is at one, twice when it is at two, and so on. How many times does the clock strike in ten hours ?	A. 55 B. 78 C. 66 D. 46
215	Question Image	A. A.P B. G.P C. H.P D. none
216	7th term of G.P 3, 6, 12 ..... is:	A. 512 B. 192 C. 48 D. 96
217	Which number cannot be a term of a geometric sequence ?	A. 0 B. 1 C. -1 D. r
218	Reciprocals of the terms of the geometric sequence form:	A. A.P B. G.P C. H.P D. none
219	The series 3 + 33 + 333 + ... is:	A. A.P B. G.P C. H.P D. none of these
220	G.M between -2i and 8i is:	A. 4 or -4 B. 4i or -4i C. 2 or -2 D. none
221	If there are six G.Ms between 3 and 284 then G_4 =	A. 24 B. 48 C. 12 D. 6
222	The product of three G.Ms between 1 and 16 is:	A. 32 B. 64 C. 128 D. 16
223	A geometric series is convergent only if:	A. | r | > 1 B. | r | < 1 C. | r | = 1 D. none of these
224	The series 2 + 2 + 2 ..... is:	A. divergent B. convergent C. oscillatory D. none of these
225	A sequence of numbers whose reciprocal form an arithmetic sequence, is known as:	A. arithmetic sequence B. geometricsequence C. harmonicsequence D. none of these
226	The reciprocal of the terms of A.P. form:	A. A.P B. G.P C. H.P D. none of these
227	If S is the H.M between 2 and b then b = :	A. -10 B. 10 C. 7 D. 5
228	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
229	n! stands for:	A. product of first natural numbers B. sum of n natural numbers C. product of n integers D. none of these
230	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
231	The factorial of positive integer is:	A. rational no. B. positive integer C. real no. D. none
232	No. of selection of n different things out of n is:	A. 1 B. n C. n! D. none
233	In how many ways two places can be filled by n objects:	A. n(n-1) B. 2! C. n(n+1) D. None
234	No. of arrangements of the letters of the word plane taking all letters at a time:	A. 5 B. 1 D. none
235	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
236	No. of signals made by 4 flags of different colors using 2 flags at a time:	A. 6 B. 12 C. 60 D. none
237	Number of digits multiple of 5 made from the digits 2, 3, 5, 7, 9 is:	A. 5 B. 24 C. 20 D. none
238	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
239	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
240	If ${}^{n}P_{2} = 30$ then n = :	A. 5 B. 6 C. 2 D. 3
241	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
242	No. of arrangements of the letters of the word PAKISTAN can be made, taken all together ?	A. 21160 B. 20160 C. 20170 D. 20016
243	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
244	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
245	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
246	The number of diagonals of a polygon with n sides is:	D. none of these
247	No. of diagonals can be formed by joining the vertices of the polygon having 5 sides ?	A. 5 B. 15 C. 51 D. 10
248	No. of diagonals can be formed by joining the vertices of the polygon having 12 sides ?	A. 70 B. 54 C. 70 D. 73

249	A key ring is an example of:	A. permutation B. circulation permutation C. combination D. none
250	Number of ways of arranging 5 keys in a circular ring is:	A. 12 B. 24 C. 6 D. 5
251	No. of necklaces can be made from 7 beads of different colors ?	A. 360 B. 120 C. 60 D. 70
252	The number of ways in which fiver persons can sit at a round table is:	A. 4! B. 5! D. none of these
253	The value of $^5C_2$ is:	A. 1 B. 10 C. 20 D. 30
254	$^nC_4 = {}^nC_8$ then n = :	A. 4 B. 12 C. 8 D. 6
255	If S is a sample space and event E is S then P(E) is:	A. 0 B. 1 C. >1 D. none
256	Question Image	A. 0 B. -1 C. >1 D. none
257	Probability of a certain event is:	A. 0 B. 1 C. >1 D. ∞
258	The probability that a number selected from the numbers 1, 2, 3, 4, 5, ..., 16 is a prime number is:	
259	A die is rolled. The probability that the dots on the top are greater than 4 is:	A. 5, 6 D. 1
260	Probability of an impossible event is:	A. 0 B. 1 C. -1 D. ∞
261	A dice is thrown. The probability to get an odd number is;	A. 1 D. none of these
262	A dice is thrown. The probability to get an even number is:	A. 1 D. none of these
263	Question Image	A. 4 B. 6 C. 8 D. 10
264	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
265	In a simultaneous throw of two dice, The probability of getting a total of 7 is:	
266	In a simultaneous throw of two dice, The probability of getting sum 3 or 11 is:	D. none
267	A dice is rolled, the probability of getting a number which is even or greater than 4 is:	D. none of these
268	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
269	Question Image	
	If a statement P(n) is true for n = 1 and truth	A. integers n B. real numbers n

270	of P(n) for n = k implies the truth of P(n) for n = k + 1, then P(n) is true for all:	B. real numbers n C. positive real numbers n D. positive integers n
271	Number of terms in the expansion of $(a+b)^n$ is:	A. n B. n+1 C. n-1 D. none of these
272	Number of terms in the expansion of $(x+y)^6$ is:	A. 7 B. 6 C. 2 D. 8
273	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
274	The middle term in the expansion of $(a+b)^{20}$ is;	A. 10th term B. 11thterm C. 12thterm D. 13thterm
275	The middle term of $(x-y)^{18}$ is:	A. 9th B. 10th C. 11th D. none of these
276	The middle terms of $(x+y)^{23}$ are:	A. T₁₀,T₁₁ B. T₁₁,T₁₂ C. T₁₂,T₁₃ D. none of these
277	Question Image	A. T₆ B. T₇ C. T₈ D. T₅
278	The middle term in the expansion of $(1+x)^{1/2}$ is:	A. T₂ B. T₃ C. does not exist D. none of these
279	Question Image	A. 2x B. x² C. 1 D. none of these
280	In binomial expansion of $(a+b)^n$, n is positive integer the sum of odd coefficients equals:	D. none of these
281	In binomial expansion of (a+b)n, n is positive integer the sum of even coefficients equals:	D. none of these
282	In binomial expansion $(a+b)^n$, n is positive integer the sum of coefficients equals:	D. none of these
283	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
284	In circular system the angle is measured in:	A. radians B. degrees C. degrees, minutes D. degrees, seconds
285	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
286	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
287	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
288	The direction of an angle Θ is determined by its:	A. value B. magnitude C. ratio D. sign
		A. sign

289	The quadrant of an angle Θ is determined by its:	B. value C. ratio D. magnitude
290	The angle between 0° and 360° and co-terminal with - 620° is:	A. 100° B. 200° C. 300° D. 320°
291	- 72° = _____:	D. none of these
292	Question Image	
293	Question Image	
294	The number of radius in the angle subtended by an arc of a circle at the center =	A. radius × arc B. radius - arc
295	To convert any angle in degrees into radians, we multiply the measure by:	
296	To convert any angle in radians into degrees, we multiply the measure by:	
297	1 radian is equal to:	C. 180° D. none of these
298	1° is equal to:	
299	180° = _____:	D. π radians
300	Question Image	A. 30° B. 45° C. 60° D. 75°
301	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
302	If cosec Θ > 0 and cot Θ < 0, then terminal arm of the angle lies in:	A. I B. II C. III D. IV
303	If sin α < 0 and cos α > 0, then α lies in:	A. I B. II C. III D. IV
304	If sinΘ <0, cosΘ<0 then the terminal arm of the angle lies in quadrant:	A. I B. II C. III D. IV
305	In a triangle if α > 45°, ß > 30° then Γ cannot be:	A. 90° B. 100° C. 120° D. 10°
306	Which one is a quadrant angle ?	A. 60° B. 180° C. 120° D. 30°
307	Which one is not a quadrant angle ?	A. 0° B. 90° C. 280° D. 270°
308	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
309	$\cos^4\Theta - \sin^4\Theta$ =	A. sin 2Θ B. cos 2Θ C. tan 2Θ D. sec 2Θ
310	$(1 - \sin^2\Theta)(1 + \tan^2\Theta)$ =	A. 0 B. 1 C. Θ D. -1
		A. tan²Θ

311	$(1 - \cos^2\Theta)(1 + \cot^2\Theta) =$	B. 0 C. 1 D. -1
312	If $\sin\Theta + \operatorname{cosec}\Theta = 2$, then $\sin^2\Theta + \operatorname{cosec}^2\Theta =$	A. 2 B. 4 C. 0 D. 8
313	The distance between the points P(x1, y1) and Q(x2, y2) is:	
314	$\sin(\alpha + ß) =$	
315	$\sin(\alpha - ß) =$	
316	$\cos(\alpha - ß) =$	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
317	$\tan(\alpha - ß) =$	
318	$\tan(\alpha + ß) =$	
319	Question Image	
320	The angles 90°±Θ, 180°±Θ, 270°±Θ, 360°±Θ, are the:	A. composite angles B. half angles C. quadrantal angles D. allied angles
321	A reference angle Θ is always:	
322	Tan (294°) =	A. tan24° B. -tan24° C. cot24° D. -cot24°
323	$\sin(\Theta - \pi) =$	
324	Question Image	A. quad I B. quad. II C. quad. III D. quad. IV
325	Question Image	A. quad. I B. quad. II C. quad. III D. quad. IV
326	Question Image	D. none of these
327	Question Image	A. - cot Θ B. - tan Θ C. tan Θ D. none of these
328	Question Image	
329	Question Image	
330	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
331	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
332	tan (-135°) =	A. 0 B. 1 D. √2
333	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°
334	tan (270° + Θ) is equal:	A. cot Θ B. tan Θ C. -cot Θ D. -tan Θ
		A. -1

335	Cot1°, Cot2°, Cot3°, ... Cot89° =	B. 1 C. ∞ D. none
336	If sin α = cos ß in any triangle ABC then:	A. α + ß = 90° B. α + ß = 180° C. α + ß = 360° D. α + ß
337	Question Image	A. 1 + cos Θ B. 1 - cos Θ
338	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)
339	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)
340	-2 sin α sin ß =	A. sin (α + ß) + sin (α - ß) B. cos (α + ß) + cos (α - ß) C. cos (α + ß) - cos (α - ß) D. cos (α - ß) + cos (α - ß)
341	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)
342	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°
343	Question Image	
344	Question Image	
345	Question Image	
346	Question Image	
347	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
348	Graphs of trigonometric function within their domains are:	A. line segments B. sharp corners C. broken lines D. smooth curves
349	Period of a trigonometric function is:	A. any real number B. any negative real number C. any integer D. a least positive number
350	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)
351	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
352	The amplitude and period of 3 sin x are:	A. 3, π B. 2, 2π C. 3, 3π D. 3, 2π
353	Amplitude of sin x is:	A. R B. [-1,1] C. 0 D. 1
354	The period of sin 2x is:	A. π B. 2π C. 3π
355	The period of 2 - sin 3x is:	
356	Question Image	

357	Question Image	
358	Question Image	
359	The period of cos 2x is:	
360	Question Image	
361	The period of 2 + cos 3x is:	
362	Question Image	B. 10π
363	The period of tan x is:	
364	The period of tan 2x is:	
365	The period of tan 3x is:	
366	Question Image	
367	Question Image	
368	The period of sec x is:	
369	The period of sec 2x is:	
370	The period of sec 3x is :	
371	Question Image	
372	Question Image	
373	The period of cosec 3x is:	
374	Question Image	
375	The period of cot x is:	
376	The period of cot 2x is:	
377	Question Image	
378	Question Image	
379	Question Image	
380	A triangle which is not right angle triangle called _____ triangle:	A. acute B. obtuse C. right D. oblique
381	Question Image	A. 3:5:2 C. 3:2:1 D. 1:2:3
382	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
383	In a right isoceles triangle, one acute angle is:	A. 30° B. 45° C. 60° D. 75°
384	If the elevation of the sun is 30°, the length of the shadow cast by a tower of 150m height is:	D. none
385	In triangle ABC, if α = 90° then:	D. none of these
386	If triangle ABC, If ß = 90° then:	D. none of these
387	In triangle ABC, If Γ = 90° then:	D. b = c + a
388	In a triangle ABC, (s - a)(s - b) = s(s - c), then the angle Γ =	
389	In any triangle ABC, law of sines is:	
390	In any triangle ABC, law of cosines is:	
391	In a triangle ABC if $a^2 - b^2 + c^2 = ac$ then < ß =	

392	In a triangle ABC b = √3, c = 1, α = 30° then a = :	A. 2 B. 1 C. 3 D. -1
393	In any triangle ABC, law of tangents is:	D. all of these
394	Question Image	A. right angled B. equilateral C. isosceles D. obtuse angled
395	If 2s = a + b + c, then in any triangle ABC:	D. all of these
396	In 2s = a + b + , then in any triangle ABC:	D. all of above
397	If 2s = a + b +c, then in any triangle ABC:	D. none of these
398	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
399	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°
400	When two sides and included angle is given, then area of triangle is given by:	D. all of these
401	If 2s = a + b + c, where a, b, c are the sides of a triangle ABC, then area of triangle ABC is given by:	
402	A circle which touches one side of a triangle externally and the other two produces sides internally is known as:	
403	A circle drawn inside a triangle and touching its sides is known as:	
404	A circle passing though the vertices of a triangle is known as:	
405	With usual notations for triangle R equals:	
406	The circum-radius R of a triangle is given by:	
407	The in-radius r of a triangle is given by:	
408	r r_1 r_2 r_3 =	D. abc
409	Question Image	
410	Question Image	A. r₁ B. r₂ C. r₃ D. r
411	Question Image	
412	r_1 =	
413	r_2 =	
414	r_3 =	
415	If x is positive or zero, then the principal value of any inverse function of x, if it exists lies in the interval:	
416	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
417	The domain of principal sine function is:	
418	The range of principal sine function is:	
419	The domain of principal cosine function is:	
420	The range of principal cosine function is:	

421	The domain of principal tangent function is:	
422	The range of principal tangent function is:	
423	Domain of the function $y = \tan^{-1} x$ is:	
424	Inverse sine function is written as:	A. (sin x)⁻¹ B. sin x⁻¹ C. arc sinx D. arc sin⁻¹ x
425	$y = \sin^{-1} x$ if and only if x = sin y, where:	
426	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
427	y = tan-1 x if and only if x = tan y, where:	A. -1 < x < 1 and - π < y < π
428	If f(x) = arccos x, then:	
429	Question Image	A. sin x B. cosec x
430	Question Image	A. cos x B. sec x
431	Question Image	A. tan x B. cot x
432	$\sin^{-1} (-x) =$	A. -sin⁻¹ x B. sin⁻¹x C. π + cos⁻¹x D. -cos⁻¹x
433	$\cos^{-1} (-x) =$	A. π + cos⁻¹ x B. π - cos⁻¹x C. π + sin⁻¹x D. π - sin⁻¹x
434	$\tan^{-1} (-x) =$	A. tan⁻¹x B. cot⁻¹x C. -tan⁻¹x D. -cot⁻¹x
435	Range of the function $y = \tan^{-1} x$ is:	
436	The domain of $y = \sin^{-1} x$ is:	
437	The range of $y = \sin^{-1} x$ is:	
438	The domain of $y = \cos^{-1} x$ function is:	
439	The range of $y = \cos^{-1} x$ function is:	
440	Question Image	A. x-axis B. y-axis C. y = x D. y = -x
441	Question Image	
442	Question Image	
443	Question Image	
444	Question Image	
445	Question Image	A. 0
446	$\cos (2\sin^{-1} x) =$	A. 1- 2x² B. 1 + 2x² C. 2x²- 1 D. x²- 1
447	$\tan(\pi + \tan^{-1}x) =$	A. x B. π+x C. π-x D. none of these
448	$\tan(\pi + \cot^{-1}x) =$	
		A. 0

449	$\cos(\tan^{-1}\infty)$ =	A. 0 B. ∞ C. 1
450	Question Image	
451	$\tan^{-1}(-\sqrt{3})$ is:	
452	Reference angles is always in:	A. IQ B. IIQ C. IIIQ D. IVQ
453	General angles of inverse trigonometric functions are written by using their:	A. Domain B. Range C. Periodicity D. Quadrants
454	Trigonometric equation has _____ solutions:	A. unique B. finite C. infinite D. no
455	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
456	Question Image	A. 0 B. 2 C. 1 D. 3
457	Question Image	A. 0 B. 1 C. 3 D. 2
458	Question Image	A. 0 B. 4 C. 1 D. 3
459	if sin x + cos x = 0, then x = _____:	D. none of these
460	Question Image	
461	Question Image	
462	The solution set of $2\cos\Theta + \sqrt{3} = 0$ is:	A. finite set B. infinite set
463	The solution set of $\sin\Theta, \cos\Theta = 1$ in $[0, 2\pi]$ is _____:	A. 0 C. solution does not exist
464	Question Image	
465	Question Image	
466	Question Image	
467	Question Image	
468	Question Image	
469	Question Image	
470	Question Image	
471	Question Image	
472	Which trigonometric equation has secondary solution ?	A. sin Θ = 1 B. cos Θ = 1 C. sec Θ = 0 D. tan Θ = 1
473	The general solution of sin x = cos x is _____:	A. nπ B. 2nπ
474	Question Image	
475	Question Image	
476	Question Image	
477	Question Image	

478	Question Image	
479	Given tan Θ = 1	A. Θ lies in quadrants 1 and 4 B. cos Θ = √2
480	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
481	Question Image	B. x = 0, y = 0
482	Question Image	A. i B. 0
483	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
484	Factors of $x^2 + y^2$ are:	A. (x + iy) (x - iy) B. (x + y) (x - y) C. (x + y) (x + y) D. none
485	If z = x + i y = r (cos Θ + i sin Θ), then arg z is:	A. tan Θ B. cos²Θ + sin²Θ C. r D. Θ
486	Question Image	A. 0 B. i C. -i D. 1
487	Question Image	
488	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
489	Question Image	A. {1, 2, 3} B. {5, 6, 7} C. {4}
490	Question Image	
491	If W = {0, 1, 2, 3, 4, ...}, N = {1, 2, 3, 4 .....} then N - W = ?	A. W B. {0} D. none of these
492	If sets A and B are equal then:	
493	Question Image	A. A B. B
494	Question Image	A. equal sets B. null sets C. overlapping sets D. subsets
495	S = {1, -1, 2, -2} is a group under:	A. multiplication B. subtraction C. addition D. none of these
496	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
497	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
498	For a square matrix A, |A| equals:	A. A^t B. |A^t| C. -|A^t| D. -A^t
499	If each element of a 3 × 3 matrix A is multiplied by 3, then the determinant of the resulting matrix is:	A. |A|³ B. 27|A| C. 3|A| D. 9|A|

500	If A is a square matrix order 3 × 3 the |kA| equals:	A. k |A| B. k²|A| C. k³ |A| D. k⁴ |A|
501	Question Image	A. 25 B. 20 C. 40 D. 2a + 2b + 2c
502	If one root of $2x^2 + ax + 6 = 0$ is 2 then the value of a is:	A. 7 B. -7
503	Question Image	D. i
504	Question Image	A. 1 B. 0 C. 2 D. 3
505	Question Image	A. 4 B. 16 C. 8 D. 64
506	Question Image	D. none of these
507	Four fourth roots of 625 are:	A. ±5,±5i B. ±5,±25i C. ±25,±25i D. none of these
508	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