NAT I Engineering Mathematics

Sr	Questions	Answers Choice
1	The number of ways in which we can courier 5 packets to 10 cities is	A. 2 x 5^o B. 5¹⁰ C. 10⁵ D. 2¹⁰
2	∫sec (ax + b) tan(ax + b) dx=_____	A. sec(ax + b)/a B. sec² (ax + b)/2 C. sec(ax + b)/x D. 1/2
3	If Z_1 = √-36, Z_2=√-25, Z_3= √-16, then what is the sum of Z_1, Z_2 and Z_3 ?	A. √3 I B. √7 C. -2-1 D. √5
4	The center of a circle of radius 10 is on the origin which of the following points lies with in the circle	A. (10,0) B. (8,8) C. (8,4) D. (0,10)
5	What is the period of Cot x?	A. 2π B. π C. π/2 D. 4π
6	1+2+3+.....+n=?	A. n(n +1)/2 B. n +1/2 C. n(n +1)(2n +1)/6 D. n³
7	Cos^{-1} x =	A. ∏ = sin⁻¹ x B. ∏ + sin⁻¹ x C. ∏/2 - sin⁻¹ x D. ∏/2 +sin⁻¹ x
8	The multiplicative inverse of x such that x = 0 is	A. -x B. does not exist C. 1/x D. 0
9	If Z= (1,2). tjem Z^{-1} = ?	A. (0.2, 0.4) B. (-0.2, 0.4) C. (0.2, -0.4) D. (-0.2, -0.4)
10	Tan (π + Tan^{-1} x) =?	A. Tan x B. X C. -x D. Cot⁻¹ x
11	Corola available in 5 models 8 colours and 3 sizes how many Corola must a local dealer have no hand in order to have one of each kind avialable?	A. 24 B. 120 C. 16 D. 39
12	d/dx a^x is	A. xa^{x-1} B. a^x C. x in a D. a^x in a
13	d/dx (√x) =	A. 2√x B. 1/√x C. 1/2√x D. None of these
14	The line joining (1,3) to (a,b) has unit gradient then	A. a-b =-2 B. a+b = 0 C. A-b =5 D. 2a + 3b =1
15	Which of the following is the solution of $Cot^2x = 1/√3$	A. π/5 B. π/3 C. π/7 D. π/9

16	Sin^{-1} x =?	A. π/2- Sin⁻¹ x B. π/2 -Cos⁻¹ x C. -Sin⁻¹ x D. -Cos⁻¹ x
17	Sin^{-1} √3/2 =?	A. 2π/3 B. π/2 C. π/3 D. v/5
18	For which of the following ordered pairs (s,t) is s + t> and s- t < -3?	A. (3,2) B. (2,3) C. (1,8) D. (0,3)
19	Which is not included in the domain of Cos^{-1} x	A. 0 B. 1 C. -1 D. 2
20	The curves y =x^2, y= x interest at	A. (0,0) ,(1,1) B. (2,4) C. (0,),(2,4) D. (0,3),(-1,1)
21	If -1 < x < 0, which of the following statement must be true?	A. x < x² < x² B. x < x³ < x² C. x² < x³ < x D. x²< x < x³
22	If f (x) = x/x^2- 4 then which is not included in the domain of f(x)	A. 0 B. -2 C. 1 D. 4
23	√23 is	A. A rational number B. A irrational number C. An even integer D. A factor of 36
24	If x < y, 2x = A and 2y = B then	A. A =B B. A < B C. A< X D. B < y
25	In which quadrant is the solution of the equation sin x - 1 = 0	A. II quadrants B. II and III quadrants C. III and Iv quadrants D. I quadrant
26	The difference of two consecutive terms of an A.P is called	A. Zero B. One C. Four D. Infinite
27	If a rectangle has an area 81x^2 and length of 27x. then what is its width?	A. 3x B. 9x C. 3x² D. 9x²
28	If the vector 2i+4j-2k and 2i +6j+xk are perpendicular then x-7	A. 4 B. 8 C. 14 D. 7
29	Derivative of strictly increasing function is always	A. Zero B. Positive C. Negative D. Both A and B
30	If f(x) : A → B and g (x) : A → B then Dom [f(x) + g(x)] is	A. Dom f(x) ∩ Dom g (x) B. Dom f(x) ∪ Dom g(x) C. [Domf(x)]² - [Dom g(x)]² D. [Dom g(x)]²-[Domf(x)]²
31	The equation of the circle with center origin and radius 2√2 is	A. x² + y² = 2√2 B. x² + y² = 8 C. x² - y² = 2√2 D. x² -

		y² = 8
32	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
33	The statement that a group can have more than one identity elements is	A. True B. False C. Fallacious D. Some times true
34	What is the domain of $y = Sin^{-1} x$?	A. -1 ≤ x ≤1 B. 1 ≤ x ≤ 1 C. 0 ≤ x ≤ π D. -π/2 ≤ x ≤ π/2
35	If you 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
36	The cube roots of unity ω = ----------	A. 1-i √-3 / 2 B. -1+i √-3 / 2i C. -1+i √3 / 2 D. 1+i √3 / 2
37	The Domain of f(x) = log x is	A. [0,∞] B. (0, ∞) C. [0,∞[D. [∞ ,∞]
38	If $y = (ax)^m + b^m$, then dy/dx equals	A. m (ax)^m x^{m-1} B. ma^m x^{m-1} C. m a^m x^{m-1} D. m a^m x^{m-2}
39	ω^{88} = ?	A. A and B are multiplicative inverse of each other B. A and B are additive inverses of each other C. A and B are singular matrices D. A and B are equal
40	$P(x) = 2x^4 - 3x^3 + 2x - 1$ is polynomial of degree	A. 1 B. 2 C. 3 D. 4
41	6 is	A. A prime integer B. An irrational number C. A rational number D. A odd integer
42	If a line passes through origin then the equation of the line is	A. y = m/x B. y = mx C. x = my D. None
43	Which is a proper rational fraction	A. 3x - 7/x² +4 B. 2x² - 5/x² + 4 C. 3x⁴/2x² - 15 D. All are proper rational fraction
44	The set (Z, +) forms a group	A. Function on B B. Range C. Domain D. A into B
45	If $x^2 + y^2 = 4$, Then dy/dx =	A. 2x +2y B. 4 -x² C. -x/y D. y/x
46	The radius of the circle $(x-1)^2 + (y+3)^2 = 64$ is	A. 8 B. 2√2 C. 4

		D. 64
47	r + 3 > 5 then which is true	A. r + 2 > 4 B. r + 2 < 4 C. r + 2 + 4 D. None
48	The area of circle of unit radius=	A. 0 B. 1 C. 4 D. π
49	Which of the following is not defined?	A. Arcsin 1/9 B. ArcCos (-4/3) C. Arctan 11/12 D. Arccot (-4)
50	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
51	If 1 + Cos x = 0 then x =	A. π +2n π B. π + nπ C. π - nπ D. π/2
52	The nth term of A,P:1,5,9,15.....is given by	A. 4n - 3 B. 4n + 1 C. 3n -4 D. 4n +3
53	Sum of integers starting from to n is	A. n(n+1)/4 B. n(n+1)/6 C. n(n+1)/2 D. n(n-1)/2
54	F(x) = xx decreases in the interval	A. (0,e) B. (0.1) C. (-∞.0) D. None
55	120° degrees are equal to how many radians?	A. π/3 radians B. 2π/3 radians C. π/4 radians D. π/2 radians
56	If x lies in {0, 2π} and Cosec x = 2 then x =	A. π/ 6 and 5π/6 B. π +2nπ C. nπ D. 2π/3 and π/3
57	Cos 315° =	A. 0.707 B. 0.5 C. 1 D. 0
58	If 2 Sin x Cos 2 x = Sin x then?	A. X = nπ+ π/6 B. X = nπ +π/3 C. X = nπ +1 D. X = nπ + π/2
59	Sin^{-1} (-x) =?	A. Sin⁻¹ x B. -Sin⁻¹ x C. Cos⁻¹ x D. -Cos⁻¹ x
60	If Cosθ =0, Then θ=	A. nπ/2 B. (2n + 1)π/2 C. (2n - 1)π/2 D. (n ±1)π/2
61	The direction cosines of y-axis are	A. 1,0,0 B. 0,1,0 C. 0,0,1 D. 1,1,1
62	Tan^{-1} 1/x =_____	A. Sin x B. Sec⁻¹ X C. Cot⁻¹ X D. Sin lx/cos- lx
63	AreCot √3 =?	A. π/2 B. π C. 2π D. π/6
64	Period of Sin 2x =	A. π B. 4π

64	Period of Sin 2x =	C. 2nπ D. 2π
65	A die is thrown what is the probability that there is a prime number on the top?	A. 1/2 B. 1/3 C. 1/6 D. 2/3
66	In general matrices do not satisfy	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
67	If α and β be irrational roots of a quadratic equation, then	A. α = b/a and β = ca B. α = a/b and β = -c/a C. α² + β² = 1 D. α = -b/a and β= c/a
68	Given eight points in a plane no three of which are collinear how many lines do the points determine?	A. 16 B. 64 C. 28 D. 36
69	If i,m,n are the direction cosines of a vector $\overline{OP}$ then	A. l² + m² + n² =0 B. l² - m² + n² =1 C. l² + m² + n² =1 D. l² + m² - n² =0
70	The set of the first elements of the ordered pairs forming a relation is called its	A. -x B. does not exist C. 1/x D. 0
71	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
72	Second derivative of $y = x^9 + 10x^2 + 2x - 1$ at x = 0 is	A. 10 B. 20 C. 12 D. 1
73	If y = sin(ax + b) then fourth derivative of y with respect to x=	A. a⁴ cos (ax + b) B. a⁴ sin (ax + b) C. -a⁴ sin(ax +b) D. a4 tan (ax + b)
74	Partial fraction of $1/x^3-1$ will be of the form	A. Conjugate pair B. ordered pair C. reciprocal pair D. quadratic function
75	If A = (3,8) and B = (5,6) then the distance between A and B is	A. 2√2 B. 2 C. 1 D. 6
76	If C^n_r, P^n_r = 24:1 then r = ?	A. 1 B. 2 C. 3 D. 4
77	If any two rows (or any two columns) of a square matrix are inter changed, the determinant of the resultant matrix is	A. True B. False C. Fallacious D. Some times true
78	If the 9^{th} tern of A.P is 8 and the 4^{th} term is 20. then the first term is	A. 1 B. 2 C. -2 D. -1
79	The principal value of $\sin^{-1}$ [√3/2] is	A. π/3 B. -π/3 C. 2π/3 D. 5π/3
80	The set of [illegible] is	A. {X/X∈ A∧x ∈ U} B. {X/X∉ A∧x ∈ U}

80	The set { {a,b} } is	C. {X/X∈ A and x ∉ U} D. A-U
81	The gradient of the line joining (1,4) and (-2,5) is	A. 3/8 B. -2 2/3 C. -1/3 D. 2
82	If p and r are integers P = 0, and p ≠ -r, which of the following must be true?	A. p < r B. p > r C. p + r < 0 D. p - r < -0
83	If f(x) = x^3- $2x^2$ +4x-1, then f(-2) =?	A. 0 B. -25 C. 5 D. 45
84	If the sum of the roots of (a + 1)x^2 + (2a + 3)x + (3a + 4) = 0 is -1, then product of the roots is	A. Commutative law w.r.t multiplication B. Associative law w.r.t addition C. Distributive law w.r.t addition D. Multiplication of a scalar with the matrix
85	The number of real roots in cube roots of 8 is ?	A. n x m B. m x n C. km x n D. m x kn
86	If θ= 60° then	A. sin θ = 1/2 B. tan θ = cot 30° C. θ = π/4 D. Sec θ =4
87	The equation of the normal to the circle x^2 + 2^2 = 25 at (4,3) is	A. 3x -4y =0 B. 3x -4y= 5 C. 4x + 3y=5 D. 4x - 3y =25
88	The equation of the line with gradient 1 passing through the point (h,k) is	A. Y = x+ k-h B. Y = k/hx +1 C. Y = x + h -l D. Ky = hx =1
89	x-1/(x+2)(x-2) =	A. 4/3(x-4) -1/3(x-1) B. 3/4(x+2) + 1/4(x-2) C. 2/3(x-2) - 4/3(x+2) D. 3/x - 2/x+1
90	0 (zero) is	A. A irrational number B. A rational number C. A negative integer D. A positive number
91	The end points of the major axis of the ellipse are called its	A. foci B. Vertices C. Co-vertices D. eccentricity
92	Write the first four term of the arithmetic sequence if a_1 = 5 and other three consecutive terms are 23,26,29	A. 18 years B. 36 years C. 8 years D. 16 years
93	The line through the center and perpendicular to the transverse axis is called the	A. Major axis B. Minor axis C. Focal axis D. Conjugate axis
94	Cse π/3	A. 2 B. 1 C. 0 D. 2/√3
95	A fraction in which the degree of the numerator is less than the degree of the denominator is called	A. 1-i √-3 / 2 B. -1+i √-3 / 2i C. -1+i √3 / 2 D. 1+i √3 / 2
96	The equation of two polynomials P(x)/Q(x) where Q(x) ≠ 0 with no common factor is called	A. 12 B. 1 C. 10 D. -10
97	If Sin^{-1} x + cos^{-1} y = π, then x and y are	A. Associative angles B. Complementary angles C. Reflex angles D. Supplementary angles

98	An angle of one radian is equivalent to	A. 90^o B. 60^o C. 67^o D. 57^o, 18^o
99	The point (-5,3) is the center of a circle and P(7,-2) lies on the circle the radius of the circle is	A. 2 B. 13 C. 7 D. 8
100	If in isosceles right angled triangle one side is a then hypotenuse is	A. a√2 B. a/2 C. a D. Cannot be determined by given
101	Multiplicative inverse of "1" is	A. 4 B. 3 C. 2 D. 1
102	Two natural numbers whose sum is 25 and difference is 5, are	A. 25, 20 B. 20, 10 C. 20, 5 D. 15, 10
103	If the diagonal of a square has coordinates (1,2) and(5,6) the length of a side is	A. 3 B. 4 C. 1 D. 5
104	ω^n = ?, when n = 3k	A. 0 B. ω C. 1 D. 1 / ω
105	If 0 is not an integral multiple of π/2 then Cot^4 θ+ Cot^2 θ=?	A. Cosec⁴ θ - Cosec²θ B. Tan θ - Tan² θ C. Cosec² θ + Cosec θ D. Sinθ Cosθ
106	3/2 is	A. An irrational number B. Whole number C. A positive integer D. A rational number
107	The axis of the parabola y^2 = 4ax is	A. x =0 B. Y =0 C. X = y D. X = -y
108	Find the geometric mean between 4 and 16	A. 7, 8 B. 14, 4 C. 28, 2 D. 56, 1
109	A relation in which the equality is true only for some values of the unknown variable is called	A. An identity B. An equation C. A polynomial D. Inverse function
110	If ab > 0 and a < 0, which of the following is negative?	A. b B. -b C. -a D. (a - b)²
111	In the function v = 4/3 π r^3, V is a function of	A. 3/4 B. r C. v D. π
112	∫cot (ax + b) dx =	A. 1/a log |sin (ax + b)| +c B. 1/a log |cos ax + b) C. 1/b |sin (ax + b)| D. 1/a log |sin (bx + a)|
113	The number of ways in which 5 distinct toys can be distributed among 3 children is	A. 3⁵ B. 5³ C. C⁵₃ D. P⁵₃
114	Two matrices A and B are conformable for multiplication (AB) if and only if	A. Addition B. Multiplication C. Division D. Subtraction

115	The sum of the ages of Nazish and his son is 56 years. Eight years ago. Nazish was 3 time as old as his son. How old is the son now?	A. m = n B. m ≠ n C. mn = 1 D. mn = 0
116	Sin-1 [-1/2] = _____.	A. ∏/3 B. -∏/6 C. -∏/3 D. ∏/6
117	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
118	Which of the following is the subset of all sets ?	A. A ≠ C B. B = C C. A = B D. A ≠ B
119	π/3 is	A. A positive integer B. A negative integer C. A natural number D. An irrational number
120	The sum of the series 1+5+9+13+17+21+25+29 is:	A. 10 cm B. 20 cm C. 30 cm D. 40 cm
121	The magnitude of a vector can never be	A. Zero B. Negative C. Positive D. Absolute
122	An angle 0 is such that tan θ = 1 and cos θ is negative then	A. Sin θ is positive B. Cos θ = √2/4 C. cosθ = -1 D. sec θ is negative
123	The set of complex numbers forms a group under the binary operation of	A. 0 B. ±1 C. 1 D. {0,1}
124	How many elements are in the sample space of two rolling dies	A. 6 B. 12 C. 18 D. 36
125	The nth term in G.P 3,-6,12,..... is	A. 25, 20 B. 20, 10 C. 20, 5 D. 15, 10
126	There are 30 Red balls and 25 Green balls in a bag of a ball is drawn from the bag randomly what is the probability that a Blue ball comes out?	A. 1 B. 0.5 C. 0 D. None
127	Two dice are rolled The number of possible out come in which at least one die shows 2 is?	A. 5 B. 12 C. 11 D. 7
128	Let A, B, and C be any sets such that A∪B=A∪C and A∩B=A∩C then	A. A ≠ C B. B = C C. A = B D. A ≠ B
129	Which is in the solution set of 4x - 3y <2	A. (3,0) B. (4,1) C. (1,3) D. None
130	The conic is a parabola if	A. e <1 B. e > 1 C. e = 1 D. e = 0
131	Cos^{-1} (-x) =_____.	A. π +cos⁻¹ x B. π -sin⁻¹ x C. π +sin⁻¹ x D. π -cos⁻¹ x
132	Sin x + Cos x=1 x=	A. π B. π/2 C. π/3 D. π/4

133	Complex roots of real quadratic equation occur in	A. Nilpotent matrix B. Singular matrix C. Non singular matrix D. Diagonal matrix
134	If sin θ= 3/5 Cos θ=	A. 1/2 B. 3/5 C. 4/5 D. 1
135	Unit vector in the positive direction of x-axis is	A. $\hat{i}$ B. $\hat{j}$ C. $\hat{k}$ D. All
136	Area of ΔABC=	A. ab sin α B. 1/2 ab sin α C. 1/2 ac Sin γ D. 1/2 ac Sin β
137	The set {1, -1, i, -i}, form a group under	A. addition B. multiplication C. subtraction D. None
138	If |A| ≠ 0 then A is called	A. 1 B. -1 C. ±1 D. 0
139	The degree of the polynomial $2x^4 + 3x^2 + 16x + 28 = x^4 + 2x^2$ is	A. [a_{ij -}b_{ji}] B. [a_{ij -}b_{ij}] C. [a_{ij -}b_{ij}] D. [a_{ij] - [}b_{ij}]
140	The fifth term of the sequence $a_n = 3n - 2$ is	A. 3 B. -3 C. 13 D. -13
141	If a and b are any two distinct negative real numbers and G-ab where A.G.H represent arithmetic geometric and harmonic means then	A. 1 B. ω² C. ω D. 0
142	One of the roots of the equation $2x^2 + 3x + n = 0$ is the reciprocal of the other, then n = ----------	A. Both A,B have the same number of columns B. Both A,B do not have the same order C. Number of col A is same as number of rows of B D. Number of rows of A is same as number of col of B
143	The two different parts of the hyperbola are called is	A. Vertices B. Directrices C. Nappes D. Branches
144	Sin(a + b) + Sin(a- b) =	A. Sin a Cos b B. Sin a Sin b C. Sin a + Cos b D. Sin a - 2Cos b
145	In 30,60,90 triangle if the smallest side is 6 than the side opposite to the angle of 60^o is	A. 12 B. 3 C. $6\sqrt{3}$ D. 6
146	d/dx $\int x^1$ dx =_____.	A. 1/4 x⁴ B. X³ C. 3x³ D. x⁴/4
147	Every prime number is also	A. Rational number B. even number C. Irrational number D. multiple of two numbers
148	d/dx [cos x^2] =_____	A. -2x cos x² B. -2x² sin x² C. x² sin x D. -2x² sin x²

149	If A and B are matrices such that AB=BA=I then	A. A and B are multiplicative inverse of each other B. A and B are additive inverses of each other C. A and B are singular matrices D. A and B are equal
150	Domain of Cosecθ is	A. is R but θ= nπ B. is R but θ ≠ nπ C. is R but θ ≠ 2nπ D. is R but θ ≠ nπ/2
151	The value of the polynomial $3x^3 + 4x^2 - 5x + 4$ at x = -1 is	A. A² + B² B. A² + B²+ 2AB C. A + B D. A² + B² + AB+BA
152	In the triangle Δ ABC, where C is the right angle Tan A + Tan B=	A. A +B B. C² /AB C. A²/BC D. B²/AC
153	For any set X, X∪X is	A. 15 B. 15i C. -15i D. -15
154	A standard deck of 52 cards shuffled what is the probability of choosing the queen of the diamonds	A. 1/5 B. 1/13 C. 5/52 D. 1/52
155	∫1/ax +b dx =	A. 1/a log |ax + b| +c B. Log |ax + b| +c C. 1/b log |ax +b| +c D. 1/x log |ax + b| +c
156	An m x n matrix is said to be rectangular if	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
157	$x^2 +2x -25 = 0$ is	A. 1 B. 2 C. 3 D. 4
158	If f_1 (x) and f_2 (x) are any two anti derivatives of a function F (x) then the value of f_1 (x) = f_2 (x)	A. A variable B. A constant C. Undefined D. Infinity
159	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 < -6 C. x -y > 6 D. None
160	In the figure angle A is =	A. 15 B. 60 C. 90 D. 20
161	Which of the following is solution of $Tan^2 x = 1/3$	A. 7π/6 B. 5π/6 C. π/6 D. All
162	Sin^{-1} (-x) =	A. Cos⁻¹ 1/x B. -Sin⁻¹ X C. 1/sin-1x D. Sin⁻¹ 1/x
163	The common difference of the sequence 7,4,1.....is	A. 1 B. -3 C. 5 D. 0
164	If Sin θ =Cosθ then θ=	A. 30° B. 45° C. 60° D. 90°
165	What is the domain of y = Cot^{-1} x?	A. Set of irrational numbers only B. Set of all real numbers C. Set of integers only

		D. Set of complex numbers only
166	Sec^{-1} x=	A. Cos⁻¹ 1/x B. Cosec⁻¹ 1/x C. Cos-1 (-x) D. Tan⁻¹ x
167	The number of diagonals of a six sided figure are	A. 9 B. 6 C. 12 D. 3
168	If $k_1 : k_2 = 1:1$ then the point P dividing the line is	A. Mid point B. Extreme left point C. Extreme Right point D. Plies out side k₁ and k₂
169	2/(x+1)(x-1) = A/x+1 + B/x-1 corresponds to	A. α = b/a and β = ca B. α = a/b and β = -c/a C. α² + β² = 1 D. α = -b/a and β= c/a
170	The average of first 100 integers is=	A. 50 1/2 B. 25 1/4 C. 100 D. 5050
171	Which is an explicit function	A. y = x² +2x -1 B. x² +xy +y² =2 C. xy² -y +9/xy =1 D. All are
172	If P(E) is the probability that can event will occur then P(E)=	A. 1 B. 0.5 C. 2 D. 0
173	Sin 720° = _____	A. 1 B. 0 C. 2 D. 1/2
174	Ab > 0 and a > 0 then	A. a > b B. a < b C. a = b D. None
175	If A and B are two events then P(A∪B) =? (when A and B are disjoint)	A. P(A) - P(B) B. P(A) x P(B) C. P(A) + P(B) D. P(A) + P(B) -P(A∩B)
176	What is the conjugate of -7 -2i ?	A. -7 + 2i B. 7 + 2i C. 7-2i D. √53
177	The parametric equation of a curve are $x = t^2$, $y = t^2$ then	A. dy/dx =3t/2 B. dy/dx =t⁵ C. dy/dx =5t⁴ D. None
178	The perpendicular bisector of any chord of a circle	A. Passes through the center of the circle B. Does not pass through the center of the circle C. May or may not pass through the center of the circle D. None of these
179	If A and B are matrices of same order than (A + B)(A + B)=	A. addition B. multiplication C. subtraction D. None
180	Given X, Y are any two sets such that number of elements in X=28, number of elements in set Y=28, and number of elements in set X∪Y=54, then number of elements in set X∩Y=	A. -7 + 2i B. 7 + 2i C. 7-2i D. √53
181	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. 20

182	The vertices of the ellipse $x^2 + 4y^2 = 16$ are	A. (±,4,0) B. (0,±,4) C. (± 2,0) D. (0,± 2)
183	d/dx ($3y^4$) =	A. 12y³ dy/dx B. 8y³ C. 8y³ dy/dx D. 12y³
184	Which of the following is the equation of a line with slope 0 and passing through the point (4,3)	A. X =4 B. X = -4 C. Y = 3 D. Y = -6
185	$1/x^2$ -1 = ? (in case of making partial fraction)	A. Ax +B/x² -1 B. A/x + B/ x- 1 C. A/ x+1 + B/x-1 D. None
186	The mid point of the line joining (=1,-3) to(3,-5) is	A. (1, 1) B. (1,-1) C. (2, -8) D. (1, -4)
187	If 4 - x > 5, then	A. x > 1 B. x > -1 C. x < 1 D. x < -1
188	The value of Cos (1/2 Cos^{-1} 1/2) is equal to	A. √3/2 B. -3/4 C. 1/16 D. 1/4
189	The two consecutive positive integers whose product is 56 are	A. 7, 8 B. 14, 4 C. 28, 2 D. 56, 1
190	If sinθ = 1 then θ =	A. 2nπ +π/2 B. 2nπ C. 2π +n D. Nπ +π/2
191	If the order of A is n x m. Then order of kA is	A. Forms a group B. Does not form a group C. Contains no additive identity D. Contains no additive inverse
192	The complement of set A relative to universal set U is the set	A. X B. X C. φ D. Universal set
193	If $Z_1 = 1+i$, $Z_2 = 2+3i$, then $\|Z_2-Z_1\|$=?	A. √3 I B. √7 C. -2-1 D. √5
194	Graph of the equation $X^2 + y^2 = 4$ is	A. a circle B. an ellipse C. a parabola D. A square
195	A sequence of numbers whose reciprocals forms an arithmetic sequence is called	A. Harmonic series B. Arithmetic series C. Harmonic sequence D. Geometric sequence
196	The multiplicative inverse of -1 in the set {1-,1} is	A. 40 B. 30 C. 50 D. 20
197	If the angle between two vectors with magnitude 8 and 2 is 60° then their scalar product is	A. 12 B. 8 C. 16 D. 1
198	The general solution of the differential equation dy/dx = log x is	A. Y = -x log x- x +c B. Y = x log x + x² C. Y = x log x -x +c D. Y= 2x log x + 2x +c
199	A point of a solution region where two of its boundary lines intersect is called	A. Boundary B. Inequality C. Half plane

		C. Half plane D. Vertex
200	The range of inequality x + 2 > 4 is	A. (-1,2) B. (-2,2) C. (1,∞) D. None
201	Domain of Y = csc x is	A. R - nπ, n ε I B. R C. R -nπ/2,nεI D. All negative Integers
202	The set of all positive even integers is	A. Φ B. {1,2,3} C. {Φ} D. {0}
203	8 > t then	A. (s -t) ²>(t -8) ² B. (s -t) ²<(t -8) ² C. (s -t) ²=(t -8) ² D. None
204	The set (Q, .)	A. Infinite set B. Singleton set C. Two points set D. None
205	$(x+2)^2 = x^2 +4x +4$ is	A. 1 B. 2 C. 3 D. 4
206	If Cosα = 3/5, Cosβ = 5/13, then	A. Cos(α +β) =33/65 B. Sin(α +β) =56/65 C. sin²(α +β/2) =1/65 D. Cos(α +β) =63/65
207	In the figure PS is perpendicular to QR, if PQ = PR 26 and P8 = 24,then QR=	A. 10 B. 20 C. 40 D. 26
208	The sum of the interior angles for a 16 sided polygon is	A. 0 B. ω C. 1 D. 1 / ω
209	The graph of a quadratic function is	A. Circle B. Ellipse C. Parabola D. Hexagon
210	Which is not a half plane	A. ax + by < c B. ax + by > c C. Both A and B D. None
211	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
212	If A = $[a_{ij}]$ and b = $[b_{ij}]$ are the matrices of the order 3x3 then A-B=	A. Circle B. Ellipse C. Parabola D. Hexagon
213	The angle a (0° < a< 180°) measured counterclockwise from positive x-axis to a non-horizontal straight line / is called the	A. Rotation B. Inclination C. Radian D. None
214	The length of rectangle is twice as much as its breadth. If the perimeter is 120 cm, the length of the rectangle is	A. Same as the original determinant B. Additive inverse of the original determinant C. Both A and B D. Adj of the original matrix
215	How many different arrangements of the letters in the word QABABA are Possible?	A. 720 B. 40 C. 60 D. 30
216	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

216	The total cost of 2 apples and 3 oranges is $1.70,which of the following is true	C. Both have equal cost per item D. Cost of each single item can not be determined
217	The associative angle of 280^{o} is	A. 100^o B. 10^o C. 80^o D. -80^o
218	Sin-1 (√2/2)=?	A. π/2 B. π/3 C. 3π/4 D. 2π
219	There are 30 Red, 20 Green and some Blue bells in a bag if the probability of finding a Red ball is 1/3,how many are red balls in the bag	A. 120 B. 20 C. 40 D. 90
220	Period is Tan x/5 is	A. 5π B. 4π C. 2π D. π/5
221	Sin (2π -θ) =_____.	A. Cosθ B. -Sinθ C. -Sinθ D. -cosθ
222	Cot 360° =_____.	A. Undefined B. 0.707 C. -0.5 D. 0