GAT Subject Mathematics Mathematics

Sr	Questions	Answers Choice
1	Which is an explicit function	A. y = x² +2x -1 B. x² +xy +y² =2 C. xy² -y +9/xy =1 D. All are
2	Which is not included in the domain of Cos^{-1} x	A. 0 B. 1 C. -1 D. 2
3	P(x) = $2x^4$ -$3x^3$ +2x-1 is polynomial of degree	A. 1 B. 2 C. 3 D. 4
4	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
5	If f(x) = x^3- $2x^2$ +4x-1, then f(-2) =?	A. 0 B. -25 C. 5 D. 45
6	Which of the following is the solution of Cot^2x = 1/√3	A. π/5 B. π/3 C. π/7 D. π/9
7	Which of the following is solution of Tan^2 x = 1/3	A. 7π/6 B. 5π/6 C. π/6 D. All
8	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
9	If 1 + Cos x = 0 then x =	A. π +2n π B. π + nπ C. π - nπ D. π/2
10	If θ= 60° then	A. sin θ = 1/2 B. tan θ = cot 30° C. θ = π/4 D. Sec θ =4
11	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
12	Cos^{-1} x =	A. ∏ = sin⁻¹ x B. ∏ + sin⁻¹ x C. ∏/2 - sin⁻¹ x D. ∏/2 +sin⁻¹ x
13	Sec^{-1} x=	A. Cos⁻¹ 1/x B. Cosec⁻¹ 1/x C. Cos-1 (-x) D. Tan⁻¹ x
14	Sin^{-1} (-x) =	A. Cos⁻¹ 1/x B. -Sin⁻¹ X C. 1/sin-1x D. Sin⁻¹ 1/x
15	Tan^{-1} 1/x =_____	A. Sin x B. Sec⁻¹ X C. Cot⁻¹ X

		D. Sin Ix/cos- Ix
16	Sin-1 [-1/2] = _____.	A. ∏/3 B. -∏/6 C. -∏/3 D. ∏/6
17	If Cosθ =0, Then θ=	A. nπ/2 B. (2n + 1)π/2 C. (2n - 1)π/2 D. (n ±1)π/2
18	In the figure angle A is =	A. 15 B. 60 C. 90 D. 20
19	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
20	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
21	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
22	120° degrees are equal to how many radians?	A. π/3 radians B. 2π/3 radians C. π/4 radians D. π/2 radians
23	The principal value of $\sin^{-1}$ [√3/2] is	A. π/3 B. -π/3 C. 2π/3 D. 5π/3
24	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
25	Cos^{-1} (-x) =_____.	A. π +cos⁻¹ x B. π -sin⁻¹ x C. π +sin⁻¹ x D. π -cos⁻¹ x
26	Which of the following is not defined?	A. Arcsin 1/9 B. ArcCos (-4/3) C. Arctan 11/12 D. Arccot (-4)
27	AreCot √3 =?	A. π/2 B. π C. 2π D. π/6
28	Sin-1 (√2/2)=?	A. π/2 B. π/3 C. 3π/4 D. 2π
29	Sin^{-1} √3/2 =?	A. 2π/3 B. π/2 C. π/3 D. v/5
30	Tan (π + Tan^{-1} x) =?	A. Tan x B. X C. -x D. Cot⁻¹ x
31	Sin^{-1} x =?	A. π/2- Sin⁻¹ x B. π/2 -Cos⁻¹ x C. -Sin⁻¹ x D. -Cos⁻¹ x
32	Sin^{-1} (-x) =?	A. Sin⁻¹ x B. -Sin⁻¹ x C. Cos⁻¹ x D. -Cos⁻¹ x
		A. π B. 4π

33	Period of Sin 2x =	C. 2nπ D. 2π
34	What is the period of Cot x?	A. 2π B. π C. π/2 D. 4π
35	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
36	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
37	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
38	Sin x + Cos x=1 x=	A. π B. π/2 C. π/3 D. π/4
39	If Sin θ =Cosθ then θ=	A. 30° B. 45° C. 60° D. 90°
40	Cos 315° =	A. 0.707 B. 0.5 C. 1 D. 0
41	Period is Tan x/5 is	A. 5π B. 4π C. 2π D. π/5
42	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
43	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
44	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
45	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
46	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
47	Sin (2π -θ) =_____.	A. Cosθ B. -Sinθ C. -Sinθ D. -cosθ
48	Cot 360° =_____.	A. Undefined B. 0.707 C. -0.5 D. 0
49	Sin 720° = _____	A. 1 B. 0 C. 2 D. 1/2
50	If sinθ = 1 then θ =	A. 2nπ +π/2 B. 2nπ C. 2π +n D. Nπ +π/2

51	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
52	Cse π/3	A. 2 B. 1 C. 0 D. 2/√3
53	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√3 D. 6
54	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
55	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
56	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
57	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
58	If sin θ= 3/5 Cos θ=	A. 1/2 B. 3/5 C. 4/5 D. 1
59	The associative angle of 280^o is	A. 100^o B. 10^o C. 80^o D. -80^o
60	An angle of one radian is equivalent to	A. 90^o B. 60^o C. 67^o D. 57^o, 18^o
61	1+2+3+.....+n=?	A. n(n +1)/2 B. n +1/2 C. n(n +1)(2n +1)/6 D. n³
62	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
63	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
64	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
65	How many different arrangements of the letters in the word QABABA are Possible?	A. 720 B. 40 C. 60 D. 30
66	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
67	How many elements are in the sample space of two rolling dies	A. 6 B. 12 C. 18 D. 36
		A. 1/5

68	A standard deck of 52 cards shuffled what is the probability of choosing the queen of the diamonds	B. 1/13 C. 5/52 D. 1/52
69	If P(E) is the probability that can event will occur then P(E)=	A. 1 B. 0.5 C. 2 D. 0
70	The number of ways in which 5 distinct toys can be distributed among 3 children is	A. 3⁵ B. 5³ C. C⁵₃ D. P⁵₃