Seat No.: Enrolment No.:

GUJARAT TECHNOLOGICAL UNIVERSITY

Diploma Engineering – SEMESTER – 2(CtoD) – EXAMINATION – Winter-2023

Subject Code: C320003 **Date: 23-01-2024**

Subject Name: Advanced Mathematics(Group-2)

Time: 10:30 AM TO 12:00 PM **Total Marks: 70**

Instructions:

1. **Attempt all questions.**
2. **Make Suitable assumptions wherever necessary.**
3. **Figures to the right indicate full marks.**
4. **Use of programmable & Communication aids are strictly prohibited.**
5. **Use of non-programmable scientific calculator is permitted.**
6. **English version is authentic.**

No.	Question Text and Option. પ્રશ્ન અને વિકલ્પો.			
1.	Distance between points (-4,3) and (0,0) is =_____.			
	A.	5	B.	0
	C.	3	D.	4
૧.	બિંદુઓ (-4, 3) અને (0, 0) વચ્ચેનું નું અંતર =_____.			
	A.	5	B.	0
	C.	3	D.	4
2.	Midpoint of a line joining two points A(3,-1) and B(5,3) is = _____.			
	A.	(1,4)	B.	(4,2)
	C.	(4,1)	D.	(0,0)
૨.	બિંદુઓ A(3,-1) અને B(5,3) ને જોડતી રેખાનું મધ્યબિંદુ = _____.			
	A.	(1,4)	B.	(4,2)
	C.	(4,1)	D.	(0,0)
3.	Slope of a straight line which is parallel to Y- axis is = _____.			
	A.	0	B.	-1
	C.	1	D.	∞
૩.	Y-અક્ષને સમાંતર હોય તેવી રેખા નો ઢાળ = _____.			
	A.	0	B.	-1
	C.	1	D.	∞
4.	If two lines 4x - 6y +5 = 0 and mx - 2y -7 = 0 are perpendicular to each other then m = __.			
	A.	3	B.	1
	C.	-3	D.	-1
૪.	જો બે રેખાઓ 4x - 6y +5 = 0 અને mx - 2y -7 = 0 પરસ્પર લંબ હોય તો m = ____.			
	A.	3	B.	1
	C.	-3	D.	-1
5.	Equation of a circle with centre (0, 0) and radius 2 is _____.			
	A.	$x^2 + y^2 = 0$	B.	$x^2 - y^2 = 4$
	C.	$x^2 + y^2 = -4$	D.	$x^2 + y^2 = 4$
૫.	કેન્દ્ર (0, 0) અને ત્રિજ્યા 2 હોય તેવા વર્તુળનું સમીકરણ _____છે.			
	A.	$x^2 + y^2 = 0$	B.	$x^2 - y^2 = 4$
	C.	$x^2 + y^2 = -4$	D.	$x^2 + y^2 = 4$
6.	If A(7, –1) and B(3, 5) then slope of line AB = _____ .			

	A.	$\frac{2}{3}$	B.	$\frac{3}{2}$
	C.	$-\frac{2}{3}$	D.	$-\frac{3}{2}$
૬.	બિંદુઓ A(7, –1) અને B(3, 5) ને જોડતી રેખા AB નો ઢાળ = _____ .			
	A.	$\frac{2}{3}$	B.	$\frac{3}{2}$
	C.	$-\frac{2}{3}$	D.	$-\frac{3}{2}$
7.	If the vertices of a square are (1, 1), (-1, -1), (-1, x) and (1, y) then x, y = _____.			
	A.	1, 1	B.	-1, 1
	C.	-1, -1	D.	1, -1
૭.	જો (1, 1), (-1, -1), (-1, x) અને (1, y) ચોરસના શિરોબિંદુઓ હોય તો x, y = _____.			
	A.	1, 1	B.	-1, 1
	C.	-1, -1	D.	1, -1
8.	If two lines having slopes m_1 and m_2 respectively are perpendicular then _____.			
	A.	$m_1m_2 = -1$	B.	$m_1m_2 = 1$
	C.	$m_1 = -m_2$	D.	$m_1 = m_2$
૮.	જો બે લંબ રેખાઓ જેમનો ઢાળ અનુક્રમે m_1 અને m_2 હોય તો _____.			
	A.	$m_1m_2 = -1$	B.	$m_1m_2 = 1$
	C.	$m_1 = -m_2$	D.	$m_1 = m_2$
9.	Y - Intercept of the line x + 3y = 3 is _____.			
	A.	-1	B.	1
	C.	0	D.	3
૯.	રેખા x + 3y = 3 નો Y- અંત:ખંડ=_____.			
	A.	-1	B.	1
	C.	0	D.	3
10.	Distance between two points (4,3) and (1,2) is _____.			
	A.	$\sqrt{25}$	B.	0
	C.	$\sqrt{26}$	D.	$\sqrt{10}$
૧૦.	બિંદુઓ (4,3) અને (1,2) વચ્ચે નું અંતર = _____.			
	A.	$\sqrt{25}$	B.	0
	C.	$\sqrt{26}$	D.	$\sqrt{10}$
11.	Slope of the line 2x + 3y = 3 is _____.			
	A.	$\frac{1}{2}$	B.	$-\frac{1}{2}$
	C.	$-\frac{3}{2}$	D.	$-\frac{2}{3}$
૧૧.	રેખા 2x + 3y = 3 નો ઢાળ = _____.			
	A.	$\frac{1}{2}$	B.	$-\frac{1}{2}$
	C.	$-\frac{3}{2}$	D.	$-\frac{2}{3}$
12.	If equation of a circle is $x^2 + y^2 - 2x + 4y + 4 = 0$ then centre is _____.			
	A.	(-2, -1)	B.	(-2, 1)
	C.	(2, -1)	D.	(1, -2)
૧૨.	જો વર્તુળનું સમીકરણ $x^2 + y^2 - 2x + 4y + 4 = 0$ હોય તો કેન્દ્ર = _____.			
	A.	(-2, -1)	B.	(-2, 1)
	C.	(2, -1)	D.	(1, -2)
13.	If equation of a circle is $x^2 + y^2 - 2x + 4y + 4 = 0$ then radius is _____.			

	A.	5	B.	1
	C.	4	D.	2
૧૩.	જો વર્તુળનું સમીકરણ $x^2 + y^2 - 2x + 4y + 4 = 0$ હોય તો ત્રિજ્યા= _____.			
	A.	5	B.	1
	C.	4	D.	2
14.	Equation of a tangent at a point (4, 3) of a circle $x^2 + y^2 = 25$ is_____.			
	A.	4x + 3y = 25	B.	3x + 4y = 25
	C.	3x - 4y = 25	D.	4x - 3y = 25
૧૪.	વર્તુળ $x^2 + y^2 = 25$ ના બિંદુ (4, 3) આગળના સ્પર્શકનું સમીકરણ = _____.			
	A.	4x + 3y = 25	B.	3x + 4y = 25
	C.	3x - 4y = 25	D.	4x - 3y = 25
15.	The angle between two straight lines x + y = 0 and x - y = 0 is _____.			
	A.	π	B.	$\pi/2$
	C.	$-\pi/2$	D.	0
૧૫.	રેખાઓ y = -x અને y = x વચ્ચેના ખૂણાનું માપ = _____.			
	A.	π	B.	$\pi/2$
	C.	$-\pi/2$	D.	0
16.	If the points (-1, -1), (0, 0) and (1, x) are co-linear then x = _____.			
	A.	-2	B.	1
	C.	-3	D.	3
૧૬.	જો બિંદુઓ (-1, -1), (0, 0) અને (1, x) સમરેખ હોય તો x = _____.			
	A.	-2	B.	1
	C.	-3	D.	3
17.	If $f(x) = 2x^2 + x + 1$ then $f(3) =$_____.			
	A.	22	B.	-1
	C.	14	D.	1
૧૭.	જો $f(x) = 2x^2 + x + 1$ હોય તો f(3) =_____.			
	A.	22	B.	-1
	C.	14	D.	1
18.	If $f(x) = logx$ and $g(x) = e^x$ then $fog(1) =$_____.			
	A.	-1	B.	0
	C.	1	D.	e
૧૮.	જો f(x) = $logx$ અને g(x) = e^x હોય તો fog(1) =_____.			
	A.	-1	B.	0
	C.	1	D.	e
19.	If $f(x) = logx$ then $f(x \cdot y) =$_____.			
	A.	$f(x) \cdot f(y)$	B.	$f(x) + f(y)$
	C.	$f(x)/f(y)$	D.	$f(x) - f(y)$
૧૯.	જો f(x) = logx હોય તો $f(x \cdot y) =$_____.			
	A.	$f(x) \cdot f(y)$	B.	$f(x) + f(y)$
	C.	$f(x)/f(y)$	D.	$f(x) - f(y)$
20.	$\lim_{x \to -2} \frac{x^3 + 8}{x + 2} =$ _____.			
	A.	0	B.	8
	C.	12	D.	27
૨૦.	$\lim_{x \to -2} \frac{x^3 + 8}{x + 2} =$ _____.			
	A.	0	B.	8
	C.	12	D.	27

21.	$\lim_{n\to\infty}\frac{3n^3-7n^2+17}{3n^3+1}=$ _____.			
	A.	∞	B.	3
	C.	1	D.	-3
২১.	$\lim_{n\to\infty}\frac{3n^3-7n^2+17}{3n^3+1}=$ _____.			
	A.	∞	B.	3
	C.	1	D.	-3
22.	$\lim_{\theta\to0}\frac{tan\theta}{\theta}=$ _____.			
	A.	1	B.	2
	C.	-1	D.	0
২২.	$\lim_{\theta\to0}\frac{tan\theta}{\theta}=$ _____.			
	A.	1	B.	2
	C.	-1	D.	0
23.	$\lim_{x\to2}\frac{2x^2-1}{x-5}=$ _____.			
	A.	$\frac{7}{3}$	B.	$-\frac{3}{7}$
	C.	$\frac{3}{7}$	D.	$-\frac{7}{3}$
২৩.	$\lim_{x\to2}\frac{2x^2-1}{x-5}=$ _____.			
	A.	$\frac{7}{3}$	B.	$-\frac{3}{7}$
	C.	$\frac{3}{7}$	D.	$-\frac{7}{3}$
24.	$\lim_{x\to0}\frac{3^x-2^x}{x}=$ _____.			
	A.	1	B.	0
	C.	$\log_e\left(\frac{2}{3}\right)$	D.	$\log_e\left(\frac{3}{2}\right)$
২৪.	$\lim_{x\to0}\frac{3^x-2^x}{x}=$ _____.			
	A.	1	B.	0
	C.	$\log_e\left(\frac{2}{3}\right)$	D.	$\log_e\left(\frac{3}{2}\right)$
25.	$\lim_{x\to0}(1+x)^{\frac{1}{x}}=$ _____.			
	A.	e	B.	1
	C.	0	D.	-e
২৫.	$\lim_{x\to0}(1+x)^{\frac{1}{x}}=$ _____.			
	A.	e	B.	1
	C.	0	D.	-e
26.	$\lim_{x\to\infty}\left(1+\frac{5}{x}\right)^x=$ _____.			
	A.	e^{-5}	B.	5^e
	C.	5^{-e}	D.	e^5

૨૬.	$\lim_{x\to\infty}\left(1+\frac{5}{x}\right)^{x}$ = _____.			
	A.	e^{-5}	B.	5^{e}
	C.	5^{-e}	D.	e^{5}
27.	$\frac{d}{dx}(4^4 - x^4 - 4^x)$ = _____.			
	A.	$-x^4 \cdot \log 4 - x \cdot 4^{x-1}$	B.	0
	C.	$-4 \cdot x^3 - 4^x \cdot \log 4$	D.	$256 - 4 \cdot x^3 - 4^x \cdot \log 4$
૨૭.	$\frac{d}{dx}(4^4 - x^4 - 4^x)$ = _____.			
	A.	$-x^4 \cdot \log 4 - x \cdot 4^{x-1}$	B.	0
	C.	$-4 \cdot x^3 - 4^x \cdot \log 4$	D.	$256 - 4 \cdot x^3 - 4^x \cdot \log 4$
28.	$\frac{d}{dx}(sin^{-1}x + cos^{-1}x)$ = _____.			
	A.	1	B.	π
	C.	0	D.	$\pi/2$
૨૮.	$\frac{d}{dx}(sin^{-1}x + cos^{-1}x)$ = _____.			
	A.	1	B.	π
	C.	0	D.	$\pi/2$
29.	$\frac{d}{dx}(e^{logx})$ = _____.			
	A.	0	B.	x
	C.	1	D.	x^{-1}
૨૯.	$\frac{d}{dx}(e^{logx})$ = _____.			
	A.	0	B.	x
	C.	1	D.	x^{-1}
30.	$\frac{d}{dx}(cosx)$ = _____.			
	A.	$sinx$	B.	$-sinx$
	C.	$cosx$	D.	$secx$
૩૦.	$\frac{d}{dx}(cosx)$ = _____.			
	A.	$sinx$	B.	$-sinx$
	C.	$cosx$	D.	$secx$
31.	$\frac{d}{dx}\log(sinx)$ = _____.			
	A.	$-sinx$	B.	$-tanx$
	C.	$cosx$	D.	$cotx$
૩૧.	$\frac{d}{dx}\log(sinx)$ = _____.			
	A.	$-sinx$	B.	$-tanx$
	C.	$cosx$	D.	$cotx$
32.	$\frac{d}{dx}(cos^2x + sin^2x)$ = _____.			
	A.	1	B.	π
	C.	-1	D.	0
૩૨.	$\frac{d}{dx}(cos^2x + sin^2x)$ = _____.			
	A.	1	B.	π
	C.	-1	D.	0

33.	$\frac{d}{dx}\left(e^{2\log x}\right)$ = _____.			
	A.	$-2x$	B.	$-2/x$
	C.	$2x$	D.	$2/x$
૩૩.	$\frac{d}{dx}\left(e^{2\log x}\right)$ = _____.			
	A.	$-2x$	B.	$-2/x$
	C.	$2x$	D.	$2/x$
34.	$\frac{d}{dx}\left(cosx \cdot \sqrt{x}\right)$ = _____.			
	A.	$cosx \cdot \frac{1}{2\sqrt{x}} - sinx \cdot \sqrt{x}$	B.	$sinx \cdot \frac{1}{2\sqrt{x}} - cosx \cdot \sqrt{x}$
	C.	$cosx \cdot \frac{1}{2\sqrt{x}} + sinx \cdot \sqrt{x}$	D.	$sinx \cdot \frac{1}{2\sqrt{x}} + cosx \cdot \sqrt{x}$
૩૪.	$\frac{d}{dx}\left(cosx \cdot \sqrt{x}\right)$ = _____.			
	A.	$cosx \cdot \frac{1}{2\sqrt{x}} - sinx \cdot \sqrt{x}$	B.	$sinx \cdot \frac{1}{2\sqrt{x}} - cosx \cdot \sqrt{x}$
	C.	$cosx \cdot \frac{1}{2\sqrt{x}} + sinx \cdot \sqrt{x}$	D.	$sinx \cdot \frac{1}{2\sqrt{x}} + cosx \cdot \sqrt{x}$
35.	$\frac{d}{dx}\left(\frac{sinx^3}{x^3}\right)$ = _____.			
	A.	$\frac{3(sinx^3 - x^3 \cdot cosx^3)}{x^4}$	B.	$\frac{3(x^3 \cdot cosx^3 + sinx^3)}{x^4}$
	C.	$\frac{3(x^3 \cdot cosx^3 - sinx^3)}{x^4}$	D.	$\frac{3(sinx^3 + x^3 \cdot cosx^3)}{x^4}$
૩૫.	$\frac{d}{dx}\left(\frac{sinx^3}{x^3}\right)$ = _____.			
	A.	$\frac{3(sinx^3 - x^3 \cdot cosx^3)}{x^4}$	B.	$\frac{3(x^3 \cdot cosx^3 + sinx^3)}{x^4}$
	C.	$\frac{3(x^3 \cdot cosx^3 - sinx^3)}{x^4}$	D.	$\frac{3(sinx^3 + x^3 \cdot cosx^3)}{x^4}$
36.	If $x = t^2, y = 2t$ then $\frac{dy}{dx}$ = _____.			
	A.	$\frac{1}{t}$	B.	$-\frac{1}{t}$
	C.	$-t$	D.	t
૩૬.	જો $x = t^2, y = 2t$ હોય તો $\frac{dy}{dx}$ = _____.			
	A.	$\frac{1}{t}$	B.	$-\frac{1}{t}$
	C.	$-t$	D.	t
37.	If $y = 19x^2 - 17x - 91$ then y_3 = _____.			
	A.	6	B.	0
	C.	12	D.	-1
૩૭.	જો $y = 19x^2 - 17x - 91$ હોય તો y_3 = _____.			
	A.	6	B.	0
	C.	12	D.	-1
38.	If $xy = x - y$ then $\frac{dy}{dx}$ = _____.			
	A.	$\frac{y+1}{1+x}$	B.	$\frac{1-y}{1+x}$

	C.	$\frac{1-y}{1-x}$	D.	$\frac{y+1}{1-x}$
૩૮.	જો $xy = x - y$ હોય તો $\frac{dy}{dx} =$ _____.			
	A.	$\frac{y+1}{1+x}$	B.	$\frac{1-y}{1+x}$
	C.	$\frac{1-y}{1-x}$	D.	$\frac{y+1}{1-x}$
39.	If $y = x^x$ then $\frac{dy}{dx} =$ _____.			
	A.	$x^x(1+\log x)$	B.	$x^x(1-\log x)$
	C.	$x^x(\log x - 1)$	D.	0
૩૯.	જો $y = x^x$ હોય તો $\frac{dy}{dx} =$ _____.			
	A.	$x^x(1+\log x)$	B.	$x^x(1-\log x)$
	C.	$x^x(\log x - 1)$	D.	0
40.	If motion of a particle is given by $s = 2t^3 - 9t + 1$ then velocity = _____ at t = 2.			
	A.	10	B.	15
	C.	0	D.	40
૪૦.	જો કણની ગતિનું ગતિસૂત્ર $s = 2t^3 - 9t + 1$ હોય તો t = 2 આગળ વેગ=____.			
	A.	10	B.	15
	C.	0	D.	40
41.	Function $f(x)$ has maxima at a point $x = x_1$, if _____.			
	A.	$f''(x_1) > 0$	B.	$f''(x_1) = 0$
	C.	$f''(x_1) < 0$	D.	None of these
૪૧.	$x = x_1$, વિધેય f(x) નું મહત્તમ બિંદુ હોવાની શરત ____ છે.			
	A.	$f''(x_1) > 0$	B.	$f''(x_1) = 0$
	C.	$f''(x_1) < 0$	D.	કોઇપણ નહી
42.	Minimum value of function $f(x) = cosx$ is _____.			
	A.	0	B.	1
	C.	2	D.	-1
૪૨.	વિધેય $f(x) = cosx$ ની ન્યૂનત્તમ કિમત=____.			
	A.	0	B.	1
	C.	2	D.	-1
43.	If $f(x) = e^x$ then $f''(0) =$ _____.			
	A.	4	B.	e
	C.	0	D.	1
૪૩.	જો $f(x) = e^x$ હોય તો$f''(0) =$ _____.			
	A.	4	B.	e
	C.	0	D.	1
44.	$\frac{d}{dx}(tan^{-1}x) =$ _____.			
	A.	$\frac{-1}{\sqrt{1-x^2}}$	B.	$\frac{1}{\sqrt{1-x^2}}$
	C.	$\frac{1}{1-x^2}$	D.	$\frac{1}{1+x^2}$
૪૪.	$\frac{d}{dx}(tan^{-1}x) =$ _____.			
	A.	$\frac{-1}{\sqrt{1-x^2}}$	B.	$\frac{1}{\sqrt{1-x^2}}$

	C.	$\frac{1}{1-x^2}$	D.	$\frac{1}{1+x^2}$
45.	$\int \frac{1}{x}dx = \_\_\_\_\_ + c$			
	A.	$\log_{10} x$	B.	$\log_e x$
	C.	0	D.	$\log_2 x$
४५.	$\int \frac{1}{x}dx = \_\_\_\_\_ + c$			
	A.	$\log_{10} x$	B.	$\log_e x$
	C.	0	D.	$\log_2 x$
46.	$\int sec^2 x dx = \_\_\_\_\_ + c$			
	A.	$tanx - x$	B.	$secx$
	C.	$tanx + x$	D.	$tanx$
४६.	$\int sec^2 x dx = \_\_\_\_\_ + c$			
	A.	$tanx - x$	B.	$secx$
	C.	$tanx + x$	D.	$tanx$
47.	$\int xe^{-x} dx = \_\_\_\_\_ + c$			
	A.	e^{-x}	B.	$-xe^{-x}$
	C.	$-e^{-x}(x+1)$	D.	$-x(e^{-x}-1)$
४७.	$\int xe^{-x} dx = \_\_\_\_\_ + c$			
	A.	e^{-x}	B.	$-xe^{-x}$
	C.	$-e^{-x}(x+1)$	D.	$-x(e^{-x}-1)$
48.	$\int -cos^3 x sinx dx = \_\_\_\_\_ + c$			
	A.	$4cos^4 x$	B.	$3cos^2 x$
	C.	$\frac{1}{3}cos^2 x$	D.	$\frac{1}{4}cos^4 x$
४८.	$\int -cos^3 x sinx dx = \_\_\_\_\_ + c$			
	A.	$4cos^4 x$	B.	$3cos^2 x$
	C.	$\frac{1}{3}cos^2 x$	D.	$\frac{1}{4}cos^4 x$
49.	$\int (4x^3 + e^x - sinx)dx = \_\_\_\_\_$			
	A.	$x^4 + e^x - cosx + c$	B.	$x^4 + e^x + sinx + c$
	C.	$x^4 - e^x + cosx + c$	D.	$x^4 - e^x - cosx + c$
४९.	$\int (4x^3 + e^x - sinx)dx = \_\_\_\_\_$			
	A.	$x^4 + e^x - cosx + c$	B.	$x^4 + e^x + sinx + c$
	C.	$x^4 - e^x + cosx + c$	D.	$x^4 - e^x - cosx + c$
50.	$\int cos(3x+9)dx = \_\_\_\_\_$			
	A.	$3\sin(3x+9) + c$	B.	$3\sin(3x-9) + c$
	C.	$\frac{1}{3}\sin(3x+9) + c$	D.	$\frac{1}{3}\sin(x+9) + c$

Կօ.	$\int cos(3x+9)dx = \_\_\_\_\_$			
	A.	$3\sin(3x+9)+c$	B.	$3\sin(3x-9)+c$
	C.	$\frac{1}{3}\sin(3x+9)+c$	D.	$\frac{1}{3}\sin(x+9)+c$
51.	$\int logxdx = \_\_\_\_\_$			
	A.	$xlogx-x+c$	B.	$-xlogx-x+c$
	C.	$-xlogx+x+c$	D.	$xlogx+x+c$
Կ1.	$\int logxdx = \_\_\_\_\_$			
	A.	$xlogx-x+c$	B.	$-xlogx-x+c$
	C.	$-xlogx+x+c$	D.	$xlogx+x+c$
52.	$\int e^{6\log x}dx = \_\_\_\_\_$			
	A.	$7x^7+c$	B.	x^7+c
	C.	$\frac{1}{7}x^7+c$	D.	$\frac{7}{6}x^7+c$
Կ2.	$\int e^{6\log x}dx = \_\_\_\_\_$			
	A.	$7x^7+c$	B.	x^7+c
	C.	$\frac{1}{7}x^7+c$	D.	$\frac{7}{6}x^7+c$
53.	$\int (cosx-sinx)e^x dx = \_\_\_\_\_+c$			
	A.	$e^x cosx$	B.	$e^x sinx$
	C.	$e^x cos^2 x$	D.	$e^x sin^2 x$
Կ3.	$\int (cosx-sinx)e^x dx = \_\_\_\_\_+c$			
	A.	$e^x cosx$	B.	$e^x sinx$
	C.	$e^x cos^2 x$	D.	$e^x sin^2 x$
54.	$\int \frac{f'(x)}{f(x)}dx = \_\_\_\_\_+c$			
	A.	$f(x)$	B.	$f'(x)$
	C.	$\|\log(f(x))\|$	D.	$\log\|f(x)\|$
Կ4.	$\int \frac{f'(x)}{f(x)}dx = \_\_\_\_\_+c$			
	A.	$f(x)$	B.	$f'(x)$
	C.	$\|\log(f(x))\|$	D.	$\log\|f(x)\|$
55.	$\int_{-\pi}^{\pi} cosxdx = \_\_\_\_\_$			
	A.	-1	B.	0
	C.	1	D.	2
Կ5.	$\int_{-\pi}^{\pi} cosxdx = \_\_\_\_\_$			
	A.	-1	B.	0
	C.	1	D.	2

56.	$\int_0^1 \frac{3x^2}{1+x^3}dx =$ _____			
	A.	$-log2$	B.	1
	C.	-1	D.	$log2$
૫૬.	$\int_0^1 \frac{3x^2}{1+x^3}dx =$ _____			
	A.	$-log2$	B.	1
	C.	-1	D.	$log2$
57.	$\int_0^1 \frac{2}{1+x^2}dx =$ _____			
	A.	2π	B.	-2π
	C.	$-\pi/2$	D.	$\pi/2$
૫૭.	$\int_0^1 \frac{2}{1+x^2}dx =$ _____			
	A.	2π	B.	-2π
	C.	$-\pi/2$	D.	$\pi/2$
58.	$\int_0^{\pi/2} \frac{\sqrt{cotx}}{\sqrt{tanx}+\sqrt{cotx}}dx =$ _____			
	A.	$\pi/4$	B.	$\pi/2$
	C.	π	D.	0
૫૮.	$\int_0^{\pi/2} \frac{\sqrt{cotx}}{\sqrt{tanx}+\sqrt{cotx}}dx =$ _____			
	A.	$\pi/4$	B.	$\pi/2$
	C.	π	D.	0
59.	Volume generated by revolving the rectangle of length h and breadth r, about the y-axis is _____.			
	A.	$\frac{\pi r^2 h}{3}$	B.	$\frac{4\pi r^3}{3}$
	C.	$\pi r^2 h$	D.	πr^2
૫૯.	h લંબાઈ અને r પહોળાઈ વાળા લંબચોરસને y – અક્ષ ફરતે પરિભ્રમણ કરાવતા રચાતા ઘનનું ઘનફળ =____.			
	A.	$\frac{\pi r^2 h}{3}$	B.	$\frac{4\pi r^3}{3}$
	C.	$\pi r^2 h$	D.	πr^2
60.	Area of the region bounded by the curve $y = 2x, x - axis, lines\ x = a\ and\ x = b$ is _____units			
	A.	$b^2 - a^2$	B.	$b^2 + a^2$
	C.	$(b-a)^2$	D.	$(b+a)^2$
૬૦.	વક્રો $y = 2x$, $x - axis$, રેખાઓ $x = a$ અને $x = b$ વચ્ચે ઘેરાતા પ્રદેશનું ક્ષેત્રફળ = ____.			
	A.	$b^2 - a^2$	B.	$b^2 + a^2$
	C.	$(b-a)^2$	D.	$(b+a)^2$

61.	For the descrete group data, mean $\bar{X}$ = ____.			
	A.	$\frac{\sum x_i}{n}$	B.	$\frac{\sum f_i x_i}{n}$
	C.	$\sum x_i$	D.	$\frac{n}{\sum x_i}$
૬૧.	અસતત માહિતી વિતરણ માટે $\bar{X}$ = ____.			
	A.	$\frac{\sum x_i}{n}$	B.	$\frac{\sum f_i x_i}{n}$
	C.	$\sum x_i$	D.	$\frac{n}{\sum x_i}$
62.	For the data 20, 26, 23, 29, 27 and 31, the mean is _____.			
	A.	27	B.	27.5
	C.	26	D.	26.5
૬૨.	અવલોકનો 20, 26, 23, 29, 27 અને 31 હોય તો મધ્યક = ____.			
	A.	27	B.	27.5
	C.	26	D.	26.5
63.	The mean weight of 20 students is 45kg. One reading was entered wrong as 57 kg. instead of 47 kg. The correct mean is _____kg.			
	A.	44.5	B.	54.5
	C.	45.5	D.	55.5
૬૩.	20 વિદ્યાર્થીઓના વજનનો મધ્યક 45kg. છે. જેમાં એક અવલોકન 47 kg. ની જગ્યાએ 57 kg. લખાયેલ છે. સાચો મધ્યક = ____ kg.			
	A.	44.5	B.	54.5
	C.	45.5	D.	55.5
64.	For the data 25, a, 8, 12, 13 and 7 the mean is 12 then a = _____.			
	A.	7.01	B.	7.15
	C.	7.00	D.	7.10
૬૪.	અવલોકનો 25, a, 8, 12, 13 અને 7 માટે મધ્યક 12 હોય તો a = ____.			
	A.	7.01	B.	7.15
	C.	7.00	D.	7.10
65.	For the data 10, 9, 5, 4, 10, 7, 10, 13 and 17, the median is _____.			
	A.	8	B.	10
	C.	7	D.	9
૬૫.	અવલોકનો 10, 9, 5, 4, 10, 7, 10, 13 અને 17 હોય તો મધ્યસ્થ = ____.			
	A.	8	B.	10
	C.	7	D.	9
66.	Relation between Mean, Median and Mode is _____.			
	A.	$Z = 3M - 2\bar{X}$	B.	$Z = 2M - 3\bar{X}$
	C.	$Z = 2M + 3\bar{X}$	D.	$Z = 3M + 2\bar{X}$
૬૬.	મધ્યક, મધ્યસ્થ અને બહુલક વચ્ચેનો સંબંધ = ____.			
	A.	$Z = 3M - 2\bar{X}$	B.	$Z = 2M - 3\bar{X}$
	C.	$Z = 2M + 3\bar{X}$	D.	$Z = 3M + 2\bar{X}$
67.	For the data 51, 15, 27, 40, 15, 27, 15, 23 and 25, the mode is _____.			
	A.	15	B.	25
	C.	27	D.	40
૬૭.	અવલોકનો 51, 15, 27, 40, 15, 27, 15, 23 અને 25 હોય તો બહુલક = ____.			
	A.	15	B.	25
	C.	27	D.	40
68.	If mean is 25 and median is 26 for the same data then mode of the data is _____.			
	A.	20	B.	28

	C.	25	D.	35
૬૮.	જો અવલોકનો નો મધ્યક 25 અને મધ્યસ્થ 26 હોય તો તે અવલોકનો નો બહુલક = ___.			
	A.	20	B.	28
	C.	25	D.	35
69.	The range of the data 12, 20, 27, 42 and 30 is _____.			
	A.	25	B.	23
	C.	30	D.	0
૬૯.	અવલોકનો 12, 20, 27, 42 અને 30 માટે વિસ્તાર = ___.			
	A.	25	B.	23
	C.	30	D.	0
70.	Standard deviation σ is given by _____.			
	A.	$\sqrt{\frac{\sum(x_i - \bar{x})^2}{n}}$	B.	$\sqrt{\frac{\sum(x_i + \bar{x})^2}{n}}$
	C.	$\sqrt{\frac{\sum(\bar{x} - x_i)^2}{n}}$	D.	$\sqrt{\sum(x_i - \bar{x})^2}$
૭૦.	પ્રમાણિત વિચલન σ = ____.			
	A.	$\sqrt{\frac{\sum(x_i - \bar{x})^2}{n}}$	B.	$\sqrt{\frac{\sum(x_i + \bar{x})^2}{n}}$
	C.	$\sqrt{\frac{\sum(\bar{x} - x_i)^2}{n}}$	D.	$\sqrt{\sum(x_i - \bar{x})^2}$

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