Seat No.: _____ Enrolment No._____

GUJARAT TECHNOLOGICAL UNIVERSITY

DIPLOMA ENGINEERING – SEMESTER – 2(C2D) - EXAMINATION – SUMMER-2022

Subject Code:C320003 Date : 12-09-2022

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 simple calculators and non-programmable scientific calculators are permitted.**
5. **English version is authentic.**
6. **Use only OMR to answer this question paper.**

No.	Question Text and Option.પ્રશ્ન અને વિકલ્પો.			
1.	If $d\{(x,-4),(-8,2)\}=10$ then $x=$_____.			
	A.	0 or 16	B.	0 or 10
	C.	10 or 16	D.	0 or -16
૧.	જો $d\{(x,-4),(-8,2)\}=10$ હોય તો $x=$_____ થાય.			
	A.	0 or 16	B.	0 or 10
	C.	10 or 16	D.	0 or -16
2.	If A (2,-7) and B(8,3) are the given points then midpoint of $\overline{AB}$ is =_____.			
	A.	$(-2,5)$	B.	$(5,-2)$
	C.	$(10,-4)$	D.	$(-6,-10)$
૨.	જો A(2,-7) અને B(8,3) આપેલા બિંદુઓ છે તો $\overline{AB}$ નું મધ્યબિંદુ =_____ થાય.			
	A.	$(-2,5)$	B.	$(5,-2)$
	C.	$(10,-4)$	D.	$(-6,-10)$
3.	The locus of a point which moves such that it is equidistant from the points $(1,2)$ and $(3,4)$ is _____.			
	A.	$x+y=5$	B.	$x+2y=10$
	C.	$x-y=5$	D.	$2x+y=10$
૩.	બિંદુઓ $(1,2)$ અને $(3,4)$ સરખે અંતરે રહી ગતિ કરતા બિંદુના બિંદુપથનું સમીકરણ _____ છે.			
	A.	$x+y=5$	B.	$x+2y=10$
	C.	$x-y=5$	D.	$2x+y=10$
4.	If straight line l makes an angle of 120° with the positive direction of the $x-$axis then slope m =_____.			
	A.	$\frac{1}{\sqrt{3}}$	B.	$-\frac{1}{\sqrt{3}}$
	C.	$\sqrt{3}$	D.	$-\sqrt{3}$

૪.	સુરેખા l, $x-$અક્ષ સાથે 120° નો ખૂણો બનાવે છે તો સુરેખાનો ઢાળ m= _____.			
	A.	$\frac{1}{\sqrt{3}}$	B.	$-\frac{1}{\sqrt{3}}$
	C.	$\sqrt{3}$	D.	$-\sqrt{3}$
5.	$Y-$intercept of the line $(\cos\alpha)x+(\sin\alpha)y+(-p)=0$ is _____.			
	A.	$p\sec\alpha$	B.	$-\cot\alpha$
	C.	$p\operatorname{cosec}\alpha$	D.	$-p\sin\alpha$
૫.	રેખા $(\cos\alpha)x+(\sin\alpha)y+(-p)=0$ નો $Y-$ અંત:ખંડ _____ છે.			
	A.	$p\sec\alpha$	B.	$-\cot\alpha$
	C.	$p\operatorname{cosec}\alpha$	D.	$-p\sin\alpha$
6.	The angle between two straight lines $x+y=0$ and $x-y=0$ is _____.			
	A.	0°	B.	90°
	C.	60°	D.	30°
૬.	રેખાઓ $x+y=0$ અને $x-y=0$ વચ્ચેનો ખૂણો _____ છે.			
	A.	0°	B.	90°
	C.	60°	D.	30°
7.	If the line $kx-y+7=0$ and $5x+y+k=0$ are mutually perpendicular then $k=$_____.			
	A.	5	B.	$\frac{1}{5}$
	C.	-5	D.	$-\frac{1}{5}$
૭.	રેખા $kx-y+7=0$ અને $5x+y+k=0$ પરસ્પર લંબ હોય તો $k=$_____ થાય.			
	A.	5	B.	$\frac{1}{5}$
	C.	-5	D.	$-\frac{1}{5}$
8.	The equation of the line passing through the point A$(2,3)$ and B$(3,-1)$ is _____.			
	A.	$4x-y-11=0$	B.	$4x+y+11=0$
	C.	$4x+y-11=0$	D.	$4x-y+11=0$
૮.	A$(2,3)$ અને B$(3,-1)$ માંથી પસાર થતી રેખાનું સમીકરણ _____ છે.			
	A.	$4x-y-11=0$	B.	$4x+y+11=0$
	C.	$4x+y-11=0$	D.	$4x-y+11=0$
9.	Two lines having slopes m_1 and m_2 respectively are perpendicular if _____.			
	A.	$m_1=m_2$	B.	$m_1.m_2$
	C.	$m_1=m_2+1$	D.	$m_1.m_2=-1$
૯.	બે લંબ રેખાઓ કે જેનો ઢાળ અનુક્રમે m_1 અને m_2 હોય તો _____.			
	A.	$m_1=m_2$	B.	$m_1.m_2$
	C.	$m_1=m_2+1$	D.	$m_1.m_2=-1$
10.	Centre of the circle $x^2+y^2=45$ is _____.			

	A.	$\left(0,3\sqrt{5}\right)$	B.	$\left(3\sqrt{5},0\right)$
	C.	$\left(3\sqrt{5},3\sqrt{5}\right)$	D.	$\left(0,0\right)$
૧૦.	વર્તુળ $x^2+y^2=45$ નું કેન્દ્ર _____ છે.			
	A.	$\left(0,3\sqrt{5}\right)$	B.	$\left(3\sqrt{5},0\right)$
	C.	$\left(3\sqrt{5},3\sqrt{5}\right)$	D.	$\left(0,0\right)$
11.	The equation of the normal at the point $\left(x_1,y_1\right)$ to the circle $x^2+y^2=r^2$ is _____.			
	A.	$\frac{x_1}{x}=\frac{-y_1}{y}$	B.	$\frac{x}{x_1}=\frac{y}{y_1}$
	C.	$\frac{x_1}{y}=\frac{y_1}{x}$	D.	$\frac{y}{x_1}=\frac{y_1}{x}$
૧૧.	વર્તુળ $x^2+y^2=r^2$ ના બિંદુ $\left(x_1,y_1\right)$ આગળના અભિલંબનું સમીકરણ _____ થાય.			
	A.	$\frac{x_1}{x}=\frac{-y_1}{y}$	B.	$\frac{x}{x_1}=\frac{y}{y_1}$
	C.	$\frac{x_1}{y}=\frac{y_1}{x}$	D.	$\frac{y}{x_1}=\frac{y_1}{x}$
12.	Radius of the circle given by the equation $x^2+y^2-4x-8y+k=0$ is $\sqrt{19}$ then $k=$_____.			
	A.	12	B.	1
	C.	4	D.	39
૧૨.	વર્તુળ $x^2+y^2-4x-8y+k=0$ ની ત્રિજ્યા $\sqrt{19}$ હોય તો $k=$_____ થાય.			
	A.	12	B.	1
	C.	4	D.	39
13.	For the circle $4x^2+4y^2+8x-12y-3=0$, centre is _____.			
	A.	$\left(-1,\frac{3}{2}\right)$	B.	$\left(1,\frac{3}{2}\right)$
	C.	$\left(-1,-\frac{3}{2}\right)$	D.	$\left(\frac{3}{2},1\right)$
૧૩.	વર્તુળ $4x^2+4y^2+8x-12y-3=0$, માટે કેન્દ્ર _____ છે.			
	A.	$\left(-1,\frac{3}{2}\right)$	B.	$\left(1,\frac{3}{2}\right)$
	C.	$\left(-1,-\frac{3}{2}\right)$	D.	$\left(\frac{3}{2},1\right)$
14.	The equation of tangent to the circle $x^2+y^2+6x-8y+1=0$ at point $\left(-1,2\right)$ is _____.			
	A.	$x-y+3=0$	B.	$x+y-1=0$
	C.	$x-y-3=0$	D.	$x+y+1=0$
૧૪.	વર્તુળ $x^2+y^2+6x-8y+1=0$ ના બિંદુ $\left(-1,2\right)$ આગળના સ્પર્શકનું સમીકરણ _____ છે.			
	A.	$x-y+3=0$	B.	$x+y-1=0$
	C.	$x-y-3=0$	D.	$x+y+1=0$
15.	If $f:R\to R, f(x)=2x-1$ and $g:R\to R, g(x)=3x+k,$ and $gof=fog$ then the value			

	of k is _____.			
	A.	-2	B.	2
	C.	$\frac{1}{2}$	D.	$-\frac{1}{2}$
૧૫.	જો $f:R\to R, f(x)=2x-1$ અને $g:R\to R, g(x)=3x+k,$ તથા $gof=fog$ હોય તો $k=$ _____ થાય.			
	A.	-2	B.	2
	C.	$\frac{1}{2}$	D.	$-\frac{1}{2}$
16.	If $f(x)=\log_3 x$ then $f(9)=$_____.			
	A.	2	B.	$\frac{1}{2}$
	C.	0	D.	1
૧૬.	જો $f(x)=\log_3 x$ હોય તો $f(9)=$_____.			
	A.	2	B.	$\frac{1}{2}$
	C.	0	D.	1
17.	If $\lim_{x\to 0} f(x)=k,$ where $f(x)=\frac{\sin x}{x}+\cos x$ then $k=$_____.			
	A.	0	B.	1
	C.	2	D.	-2
૧૭.	જો $\lim_{x\to 0} f(x)=k,$ જ્યાં $f(x)=\frac{\sin x}{x}+\cos x$ હોય તો $k=$_____ થાય.			
	A.	0	B.	1
	C.	2	D.	-2
18.	$\lim_{n\to\infty}\left(1+\frac{1}{n}\right)^n=$_____, $n\in N$			
	A.	$\frac{1}{e}$	B.	e
	C.	0	D.	1
૧૮.	$\lim_{n\to\infty}\left(1+\frac{1}{n}\right)^n=$_____, $n\in N$			
	A.	$\frac{1}{e}$	B.	e
	C.	0	D.	1
19.	$\lim_{x\to 0}\frac{3x+5\sin x}{x}=$_____.			
	A.	3	B.	5
	C.	8	D.	15
૧૯.	$\lim_{x\to 0}\frac{3x+5\sin x}{x}=$_____.			
	A.	3	B.	5
	C.	8	D.	15
20.	$\lim_{x\to 0}\frac{\sin^{-1} x}{x}=$_____.			

	A.	1	B.	-1
	C.	0	D.	θ
২০.	$\lim_{x\to 0}\frac{\sin^{-1}x}{x}=$_____.			
	A.	1	B.	-1
	C.	0	D.	θ
21.	$\lim_{x\to -1}\frac{x^{31}+1}{x^{33}+1}=$_____.			
	A.	$\frac{31}{33}$	B.	$-\frac{31}{33}$
	C.	$\frac{33}{31}$	D.	$-\frac{33}{31}$
২১.	$\lim_{x\to -1}\frac{x^{31}+1}{x^{33}+1}=$_____.			
	A.	$\frac{31}{33}$	B.	$-\frac{31}{33}$
	C.	$\frac{33}{31}$	D.	$-\frac{33}{31}$
22.	$\lim_{x\to 2}\frac{x^3-8}{x-2}=$_____.			
	A.	4	B.	1
	C.	12	D.	0
২২.	$\lim_{x\to 2}\frac{x^3-8}{x-2}=$_____.			
	A.	4	B.	1
	C.	12	D.	0
23.	$\lim_{h\to 0}\frac{a^h-1}{h}=$_____.			
	A.	$\log_a e$	B.	$\log_e a$
	C.	0	D.	∞
২৩.	$\lim_{h\to 0}\frac{a^h-1}{h}=$_____.			
	A.	$\log_a e$	B.	$\log_e a$
	C.	0	D.	∞
24.	$\lim_{\theta\to 0}\frac{1-\cos^3\theta}{\sin^2 x}=$_____.			
	A.	2	B.	-2
	C.	$\frac{1}{2}$	D.	$\frac{3}{2}$
২৪.	$\lim_{\theta\to 0}\frac{1-\cos^3\theta}{\sin^2 x}=$_____.			
	A.	2	B.	-2
	C.	$\frac{1}{2}$	D.	$\frac{3}{2}$
25.	If $f(x)=\log x$ then $f(x)-f(y)=$_____			

	A.	$f(x-y)$	B.	$f(x+y)$
	C.	$f(x.y)$	D.	$f\left(\frac{x}{y}\right)$
૨૫.	જો $f(x)=\log x$ હોય તો $f(x)-f(y)=$_____			
	A.	$f(x-y)$	B.	$f(x+y)$
	C.	$f(x.y)$	D.	$f\left(\frac{x}{y}\right)$
26.	$\lim_{n\to\infty}\frac{n^2}{\sum n}=$_____.			
	A.	2	B.	6
	C.	$\frac{1}{2}$	D.	$\frac{1}{6}$
૨૬.	$\lim_{n\to\infty}\frac{n^2}{\sum n}=$_____.			
	A.	2	B.	6
	C.	$\frac{1}{2}$	D.	$\frac{1}{6}$
27.	$\frac{d}{dx}\cos ecx=$_____.			
	A.	$-\cot x$	B.	$\cot x$
	C.	$-\cos ecx.\cot x$	D.	secx
૨૭.	$\frac{d}{dx}\cos ecx=$_____.			
	A.	$-\cot x$	B.	$\cot x$
	C.	$-\cos ecx.\cot x$	D.	secx
28.	$\frac{d}{dx}\left(\tan^{-1}x+\cot^{-1}x\right)=$_____.			
	A.	1	B.	0
	C.	$\frac{\pi}{2}$	D.	-1
૨૮.	$\frac{d}{dx}\left(\tan^{-1}x+\cot^{-1}x\right)=$_____.			
	A.	1	B.	0
	C.	$\frac{\pi}{2}$	D.	-1
29.	If $y=\log\cos x$ then $\frac{dy}{dx}=$_____.			
	A.	$\cos x$	B.	$\log\sin x$
	C.	$-\tan x$	D.	$\frac{1}{\cos x}$
૨૯.	જો $y=\log\cos x$ હોય તો $\frac{dy}{dx}=$_____ થાય.			
	A.	$\cos x$	B.	$\log\sin x$
	C.	$-\tan x$	D.	$\frac{1}{\cos x}$

30.	If $y=\sin^{99}\left(\frac{\pi}{2}\right)$ then $\frac{dy}{dx}=$ _____.			
	A.	100	B.	0
	C.	99	D.	1
૩૦.	જો $y=\sin^{99}\left(\frac{\pi}{2}\right)$ હોય તો $\frac{dy}{dx}=$ _____ થાય.			
	A.	100	B.	0
	C.	99	D.	1
31	$\frac{d}{dx}\left(e^{-\log x}\right)=$ _____.			
	A.	$\frac{1}{x^2}$	B.	$-\frac{1}{x}$
	C.	$\frac{1}{x}$	D.	$-\frac{1}{x^2}$
૩૧.	$\frac{d}{dx}\left(e^{-\log x}\right)=$ _____.			
	A.	$\frac{1}{x^2}$	B.	$-\frac{1}{x}$
	C.	$\frac{1}{x}$	D.	$-\frac{1}{x^2}$
32.	$\frac{d}{dx}\left(x^x\right)=$ _____.			
	A.	$x(1+\log x)$	B.	$x^x(1+\log x)$
	C.	x^x	D.	1
૩૨.	$\frac{d}{dx}\left(x^x\right)=$ _____.			
	A.	$x(1+\log x)$	B.	$x^x(1+\log x)$
	C.	x^x	D.	1
33.	Maximum value of $f(x)=x^3+x^2-x$ is _____.			
	A.	4	B.	$-\frac{5}{27}$
	C.	1	D.	-4
૩૩.	$f(x)=x^3+x^2-x$ની મહત્તમ કિંમત _____ થાય.			
	A.	4	B.	$-\frac{5}{27}$
	C.	1	D.	-4
34.	$\frac{d}{dx}\cot^{-1}x=$ _____.			
	A.	$-\frac{1}{1+x^2}$	B.	$\frac{1}{1-x^2}$
	C.	$\frac{1}{1+x^2}$	D.	$-\frac{1}{1-x^2}$
૩૪.	$\frac{d}{dx}\cot^{-1}x=$ _____.			

	A.	$-\frac{1}{1+x^2}$	B.	$\frac{1}{1-x^2}$
	C.	$\frac{1}{1+x^2}$	D.	$-\frac{1}{1-x^2}$
35.	If $f(x)=\frac{\log x}{x}$, then $f'(1)=$_____.			
	A.	-1	B.	2
	C.	1	D.	0
૩૫.	જો $f(x)=\frac{\log x}{x}$, હોય તો $f'(1)=$_____ થાય.			
	A.	-1	B.	2
	C.	1	D.	0
36.	If $y=\cos^2 x$ then $\frac{dy}{dx}=$_____.			
	A.	$\cos 2x$	B.	$-\sin 2x$
	C.	$\sin 2x$	D.	$2\cos x$
૩૬.	જો $y=\cos^2 x$હોય તો $\frac{dy}{dx}=$_____ થાય.			
	A.	$\cos 2x$	B.	$-\sin 2x$
	C.	$\sin 2x$	D.	$2\cos x$
37.	If $x=at^2$ and $y=2at$ then $\frac{dy}{dx}=$_____.			
	A.	$\frac{4}{3}$	B.	$4t$
	C.	$\frac{1}{t}$	D.	$\frac{4}{3t^2}$
૩૭.	જો $x=at^2$ અને $y=2at$ હોય તો $\frac{dy}{dx}=$_____ થાય.			
	A.	$\frac{4}{3}$	B.	$4t$
	C.	$\frac{1}{t}$	D.	$\frac{4}{3t^2}$
38.	For $y=5^x, \frac{dy}{dx}=$_____.			
	A.	1	B.	0
	C.	5^x	D.	$5^x \log_e 5$
૩૮.	$y=5^x$માટે $\frac{dy}{dx}=$_____ થાય.			
	A.	1	B.	0
	C.	5^x	D.	$5^x \log_e 5$
39.	The equation of motion of particle is $s=t^3+3t, t>0$, then the velocity=_____ at $t=3$.			
	A.	18 unit	B.	30 unit
	C.	36unit	D.	72 unit
૩૯.	ગતિ કરતા કણનું સમીકરણ $s=t^3+3t, t>0$છે તો $t=3$આગળ તેનો વેગ v=_____ થાય.			
	A.	18 unit	B.	30 unit

	C.	36unit	D.	72 unit
40.	For function $f(x)$, If _____then $f(x)$ has minima at $x=9$.			
	A.	$f'(9)=0, f''(9)<0$	B.	$f'(9)=0, f''(9)>0$
	C.	$f'(9)<0, f''(9)<0$	D.	$f'(9)<0, f''(9)>0$
૪૦.	વિધેય $f(x)$ જો $x=9$ પાસે ન્યૂન્તમ મૂલ્ય ધારણ કરે તો _____.			
	A.	$f'(9)=0, f''(9)<0$	B.	$f'(9)=0, f''(9)>0$
	C.	$f'(9)<0, f''(9)<0$	D.	$f'(9)<0, f''(9)>0$
41.	If $y=x^4$ then $\frac{d^4y}{dx^4}=$_____.			
	A.	12	B.	24
	C.	$24x$	D.	None of these
૪૧.	જો $y=x^4$ હોય તો $\frac{d^4y}{dx^4}=$_____ થાય.			
	A.	12	B.	24
	C.	$24x$	D.	આમાંનુ એક પણ નહી
42.	If $xy=4x^2$ then $\frac{dy}{dx}=$_____.			
	A.	$8x-y$	B.	$8-\frac{y}{x}$
	C.	$\frac{y}{x}-8$	D.	None of these
૪૨.	જો $xy=4x^2$ હોય તો $\frac{dy}{dx}=$_____ થાય.			
	A.	$8x-y$	B.	$8-\frac{y}{x}$
	C.	$\frac{y}{x}-8$	D.	આમાંનુ એક પણ નહી
43.	Minimum value of $f(x)=x+\frac{1}{x}$ is =_____.			
	A.	-2	B.	1
	C.	-1	D.	2
૪3.	$f(x)=x+\frac{1}{x}$ ની ન્યૂન્તમ કિંમત =_____ થાય.			
	A.	-2	B.	1
	C.	-1	D.	2
44.	The equation of motion of a particle is $s=t^3-3t^2+4t+3$ then acceleration at $t=2$is _____.			
	A.	4 cm/sec^2	B.	6 cm/sec^2
	C.	2 cm/sec^2	D.	8 cm/sec^2
૪૪.	ગતિ કરતા કણનું સમીકરણ $s=t^3-3t^2+4t+3$ છે તો $t=2$આગળ તેનો પ્રવેગ $a=$_____ થાય.			
	A.	4 cm/sec^2	B.	6 cm/sec^2
	C.	2 cm/sec^2	D.	8 cm/sec^2

45.	$\int \frac{1}{a^2+x^2}dx=$_____.			
	A.	$\frac{1}{2a}\log\left\|\frac{x-a}{x+a}\right\|+c$	B.	$\frac{1}{2a}\log\left\|\frac{a+x}{a-x}\right\|+c$
	C.	$\frac{1}{a}\tan^{-1}\frac{x}{a}+c$	D.	$\log\left\|x+\sqrt{x^2+a^2}\right\|+c$
४५.	$\int \frac{1}{a^2+x^2}dx=$_____.			
	A.	$\frac{1}{2a}\log\left\|\frac{x-a}{x+a}\right\|+c$	B.	$\frac{1}{2a}\log\left\|\frac{a+x}{a-x}\right\|+c$
	C.	$\frac{1}{a}\tan^{-1}\frac{x}{a}+c$	D.	$\log\left\|x+\sqrt{x^2+a^2}\right\|+c$
46.	$\int 3^x dx=$_____.			
	A.	$\frac{3}{\log 3^x}+c$	B.	$\frac{3^x}{\log 3}+c$
	C.	$\frac{3^x}{\log 3^x}+c$	D.	$\frac{3}{\log 3}+c$
४६.	$\int 3^x dx=$_____.			
	A.	$\frac{3}{\log 3^x}+c$	B.	$\frac{3^x}{\log 3}+c$
	C.	$\frac{3^x}{\log 3^x}+c$	D.	$\frac{3}{\log 3}+c$
47.	$\int \frac{\log x}{x}dx=$_____$+c$.			
	A.	$\left[\log\|x\|^2\right]$	B.	e^x
	C.	$\frac{1}{2}(\log x)^2$	D.	$\log\|x\|$
४७.	$\int \frac{\log x}{x}dx=$_____$+c$			
	A.	$\left[\log\|x\|^2\right]$	B.	e^x
	C.	$\frac{1}{2}(\log x)^2$	D.	$\log\|x\|$
48.	$\int \frac{f'(x)}{f(x)}dx=$_____.			
	A.	$\log\left[f'(x)\right]+c$	B.	$n\left[f(x)\right]^{n-1}+c$
	C.	$\log\left[f(x)+f'(x)\right]+c$	D.	$\log\left[f(x)\right]+c$
४८.	$\int \frac{f'(x)}{f(x)}dx=$_____.			
	A.	$\log\left[f'(x)\right]+c$	B.	$n\left[f(x)\right]^{n-1}+c$
	C.	$\log\left[f(x)+f'(x)\right]+c$	D.	$\log\left[f(x)\right]+c$

49.	If f is continuous and odd on $[-a,a]$, then $\int_{-a}^{a} f(x)dx =$ _____.			
	A.	$2\int_{0}^{a} f(x)dx$	B.	$\int_{0}^{a} f(a-x)dx$
	C.	0	D.	None of these
૪૯.	જો f $[-a,a]$ પર સતત અને અયુગ્મ હોય તો $\int_{-a}^{a} f(x)dx =$ _____.			
	A.	$2\int_{0}^{a} f(x)dx$	B.	$\int_{0}^{a} f(a-x)dx$
	C.	0	D.	આમાંનુ એક પણ નહી
50.	$\int_{0}^{\frac{\pi}{4}} \cos x dx =$ _____.			
	A.	$\frac{1}{2}$	B.	$-\frac{1}{2}$
	C.	$\frac{1}{\sqrt{2}}$	D.	$\sqrt{2}$
૫૦.	$\int_{0}^{\frac{\pi}{4}} \cos x dx =$ _____.			
	A.	$\frac{1}{2}$	B.	$-\frac{1}{2}$
	C.	$\frac{1}{\sqrt{2}}$	D.	$\sqrt{2}$
51.	$\int \cos(3x+2)dx =$ _____ $+c$			
	A.	$\frac{1}{3}\sin(3x+2)$	B.	$\frac{1}{3}\cos(3x+2)$
	C.	$3\cos(3x+2)$	D.	None of these
૫૧.	$\int \cos(3x+2)dx =$ _____ $+c$			
	A.	$\frac{1}{3}\sin(3x+2)$	B.	$\frac{1}{3}\cos(3x+2)$
	C.	$3\cos(3x+2)$	D.	આમાંનુ એક પણ નહી
52.	$\int xe^x dx =$ _____ $+c$			
	A.	$xe^x + e^x$	B.	$e^x + x$
	C.	$xe^x - e^x$	D.	None of these
૫૨.	$\int xe^x dx =$ _____ $+c$			
	A.	$xe^x + e^x$	B.	$e^x + x$
	C.	$xe^x - e^x$	D.	આમાંનુ એક પણ નહી
53.	$\int_{-3}^{3} x^5 dx =$ _____			
	A.	5	B.	20
	C.	15	D.	0

૫૩.	$\int_{-3}^{3} x^5 dx =$ _____			
	A.	5	B.	20
	C.	15	D.	0
54.	$\int_{0}^{\frac{\pi}{4}} \tan x.\sec^2 x dx =$ _____			
	A.	1	B.	0
	C.	$-\frac{1}{2}$	D.	$\frac{1}{2}$
૫૪.	$\int_{0}^{\frac{\pi}{4}} \tan x.\sec^2 x dx =$ _____			
	A.	1	B.	0
	C.	$-\frac{1}{2}$	D.	$\frac{1}{2}$
55.	$\int_{0}^{a} \frac{\sqrt{x}}{\sqrt{x}+\sqrt{a-x}} dx =$ _____			
	A.	0	B.	$2a$
	C.	a	D.	$\frac{a}{2}$
૫૫.	$\int_{0}^{a} \frac{\sqrt{x}}{\sqrt{x}+\sqrt{a-x}} dx =$ _____			
	A.	0	B.	$2a$
	C.	a	D.	$\frac{a}{2}$
56.	$\int e^{-\log\sec x} dx =$ _____ $+c$			
	A.	$\sec x.\tan x$	B.	$\sin x$
	C.	$\cos x$	D.	$\tan x$
૫૬.	$\int e^{-\log\sec x} dx =$ _____ $+c$			
	A.	$\sec x.\tan x$	B.	$\sin x$
	C.	$\cos x$	D.	$\tan x$
57.	The area enclosed by the curve $y=x^2$, the $x-$axis and the line $x=2$ is _____ units.			
	A.	$\frac{8}{3}$	B.	$\frac{16}{3}$
	C.	$\frac{32}{3}$	D.	$\frac{64}{3}$
૫૭.	વક્ર $y=x^2$, $x-$અક્ષ અને રેખા $x=2$ વડે ઘેરાયેલા પ્રદેશનું ક્ષેત્રફળ _____ એકમ થાય.			
	A.	$\frac{8}{3}$	B.	$\frac{16}{3}$
	C.	$\frac{32}{3}$	D.	$\frac{64}{3}$
58.	Area of the standard circle $x^2+y^2=a^2, (a>0)$ is _____.			
	A.	$2\pi a^2$	B.	πa^2

	C.	$2\pi a$	D.	$4\pi a^2$
૫૮.	પ્રમાણિત વર્તુળ $x^2+y^2=a^2,(a>0)$ નું ક્ષેત્રફળ _____છે.			
	A.	$2\pi a^2$	B.	πa^2
	C.	$2\pi a$	D.	$4\pi a^2$
59.	Volume of the regular cone having radius of base r and height h is _____.			
	A.	$\frac{4}{3}\pi r^2 h$	B.	$\frac{2}{3}\pi rh$
	C.	$\frac{2}{3}\pi r^3$	D.	$\frac{1}{3}\pi r^2 h$
૫૯.	આધાર ત્રિજ્યા r અને h ઊંચાઈ ધરાવતા નિયમિત શંકુનું ઘનફળ _____છે.			
	A.	$\frac{4}{3}\pi r^2 h$	B.	$\frac{2}{3}\pi rh$
	C.	$\frac{2}{3}\pi r^3$	D.	$\frac{1}{3}\pi r^2 h$
60.	$\int \frac{dx}{9+4x^2} =$_____$+c$			
	A.	$\frac{1}{6}\tan^{-1}\left(\frac{2x}{3}\right)$	B.	$\frac{1}{12}\tan^{-1}\left(\frac{2x}{3}\right)$
	C.	$\frac{1}{12}\tan^{-1}\left(\frac{3}{2x}\right)$	D.	$\frac{1}{6}\tan^{-1}\left(\frac{3}{2x}\right)$
૬૦.	$\int \frac{dx}{9+4x^2} =$_____$+c$			
	A.	$\frac{1}{6}\tan^{-1}\left(\frac{2x}{3}\right)$	B.	$\frac{1}{12}\tan^{-1}\left(\frac{2x}{3}\right)$
	C.	$\frac{1}{12}\tan^{-1}\left(\frac{3}{2x}\right)$	D.	$\frac{1}{6}\tan^{-1}\left(\frac{3}{2x}\right)$
61.	If $x_1, x_2, x_3 \ldots x_n$ be the n observations of ungrouped data. The mean of the observation $\bar{x} =$_____.			
	A.	$\frac{\sum xi}{2}$	B.	$\sum xi$
	C.	$n\sum xi$	D.	$\frac{\sum xi}{n}$
૬૧.	જો $x_1, x_2, x_3 \ldots x_n$ એ n observations of ungrouped data. હોય તો તે અવલોકનો નો મધ્યક $\bar{x} =$_____થાય.			
	A.	$\frac{\sum xi}{2}$	B.	$\sum xi$
	C.	$n\sum xi$	D.	$\frac{\sum xi}{n}$
62.	અવલોકનો 3, 8, 5, 12, 14, 9, 1, 7, 17 માટે મધ્યસ્થ _____થાય.			
	A.	7	B.	8
	C.	9	D.	12
૬૨.				
	A.	7	B.	8
	C.	9	D.	12

63.	_____formula gives the relation between Mean, Median and Mode.			
	A.	$Z+3M+2\bar{X}=0$	B.	$Z=2\bar{X}-3M$
	C.	$Z=3M-2\bar{X}$	D.	$Z-2\bar{X}=3M$
૬૩.	મધ્યક ,મધ્યસ્થ અને બહુલક વચ્ચેનો સંબંધ દર્શાવતું સૂત્ર _____છે.			
	A.	$Z+3M+2\bar{X}=0$	B.	$Z=2\bar{X}-3M$
	C.	$Z=3M-2\bar{X}$	D.	$Z-2\bar{X}=3M$
64.	The mean of the first five odd natural numbers is _____.			
	A.	5	B.	6
	C.	4	D.	3
૬૪.	પ્રથમ પાંચ પ્રાકૃતિક અયુગ્મ સંખ્યાનો મધ્યક _____થશે.			
	A.	5	B.	6
	C.	4	D.	3
65.	Standard deviation of the observations 1, 2, 3, 4, 5 and 6 is _____.			
	A.	$\frac{35}{12}$	B.	$\sqrt{35}$
	C.	$\sqrt{\frac{35}{3}}$	D.	$\sqrt{\frac{35}{12}}$
૬૫.	અવલોકનો 1, 2, 3, 4, 5 અને 6 માટે પ્રમાણિત વિચલન _____થશે.			
	A.	$\frac{35}{12}$	B.	$\sqrt{35}$
	C.	$\sqrt{\frac{35}{3}}$	D.	$\sqrt{\frac{35}{12}}$
66.	Mean of the observations 6, 18, 4, k, and 12 is 14 then $k=$_____.			
	A.	18	B.	30
	C.	25	D.	20
૬૬.	અવલોકનો 6, 18, 4, k, અને 12 નો મધ્યક 14 હોય તો $k=$_____થાય.			
	A.	18	B.	30
	C.	25	D.	20
67.	Mode of the observations 10, 2, 6, 7, 8, 7, 5, 6, 7, 11,9 is _____.			
	A.	11	B.	7
	C.	6	D.	2
૬૭.	અવલોકનો10, 2, 6, 7, 8, 7, 5, 6, 7, 11,9 માટે બહુલક _____થશે.			
	A.	11	B.	7
	C.	6	D.	2
68.	The variance of the observations 3, 4, 5 and 8 is _____.			
	A.	1.87	B.	28.5
	C.	4.5	D.	3.5
૬૮.	અવલોકનો3, 4, 5 અને 8 નું વિચરણ _____છે.			
	A.	1.87	B.	28.5
	C.	4.5	D.	3.5
69.	The range of the data 18, 20, 28, 15, 17, 22, 25, 34, 29, 32 is _____.			
	A.	34	B.	15
	C.	19	D.	None of these
૬૯.	અવલોકનો 18, 20, 28, 15, 17, 22, 25, 34, 29, 32 નો વિસ્તાર _____.			
	A.	34	B.	15

	C.	19	D.	આમાંનુ એક પણ નહી
70.	If the standard deviation of the variable x is 12 and if $y=\frac{2x+3}{4}$ then the standard deviation of y is _____.			
	A.	6	B.	3
	C.	4	D.	24
૭૦.	ચલ x નું પ્રમાણિત વિચલન 12 હોય અને જો $y=\frac{2x+3}{4}$ હોય તો y નું પ્રમાણિત વિચલન _____થાય.			
	A.	6	B.	3
	C.	4	D.	24

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