Seat No.: Enrolment No.:

GUJARAT TECHNOLOGICAL UNIVERSITY

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

Subject Code: C4320001 **Date: 12-01-2024**

Subject Name: Applied Mathematics

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.	Order of Matrix $\begin{bmatrix} 3 & 1 & 4 \\ 2 & 5 & 2 \end{bmatrix}$ is _____			
	A.	2×3	B.	3×2
	C.	2×2	D.	6
૧.	શ્રેણિક $\begin{bmatrix} 3 & 1 & 4 \\ 2 & 5 & 2 \end{bmatrix}$ ની કક્ષા _____ છે			
	A.	2×3	B.	3×2
	C.	2×2	D.	6
2.	If $A=\begin{bmatrix} 2 & 1 \\ 3 & 4 \end{bmatrix}$ then $2A=$_____			
	A.	$\begin{bmatrix} 2 & 1 \\ 6 & 8 \end{bmatrix}$	B.	$\begin{bmatrix} 4 & 2 \\ 3 & 4 \end{bmatrix}$
	C.	$\begin{bmatrix} 4 & 2 \\ 6 & 8 \end{bmatrix}$	D.	$\begin{bmatrix} 4 & 1 \\ 6 & 4 \end{bmatrix}$
૨.	જો $A=\begin{bmatrix} 2 & 1 \\ 3 & 4 \end{bmatrix}$ તો $2A=$_____			
	A.	$\begin{bmatrix} 2 & 1 \\ 6 & 8 \end{bmatrix}$	B.	$\begin{bmatrix} 4 & 2 \\ 3 & 4 \end{bmatrix}$
	C.	$\begin{bmatrix} 4 & 2 \\ 6 & 8 \end{bmatrix}$	D.	$\begin{bmatrix} 4 & 1 \\ 6 & 4 \end{bmatrix}$
3.	If $A=\begin{bmatrix} 2 & 4 \\ 1 & 5 \\ 3 & 7 \end{bmatrix}$ then $A^T=$_____			
	A.	$\begin{bmatrix} 2 & 5 & 3 \\ 4 & 1 & 7 \end{bmatrix}$	B.	$\begin{bmatrix} 2 & 5 & 7 \\ 4 & 1 & 3 \end{bmatrix}$
	C.	$\begin{bmatrix} 2 & 1 & 3 \\ 4 & 5 & 7 \end{bmatrix}$	D.	$\begin{bmatrix} 4 & 5 & 7 \\ 2 & 1 & 3 \end{bmatrix}$

૩.	જો $A=\begin{bmatrix}2 & 4\\ 1 & 5\\ 3 & 7\end{bmatrix}$ તો $A^T=$ _____			
	A.	$\begin{bmatrix}2 & 5 & 3\\ 4 & 1 & 7\end{bmatrix}$	B.	$\begin{bmatrix}2 & 5 & 7\\ 4 & 1 & 3\end{bmatrix}$
	C.	$\begin{bmatrix}2 & 1 & 3\\ 4 & 5 & 7\end{bmatrix}$	D.	$\begin{bmatrix}4 & 5 & 7\\ 2 & 1 & 3\end{bmatrix}$
4.	$\begin{bmatrix}3 & 1\\ 2 & 4\end{bmatrix}+\begin{bmatrix}1 & 1\\ 3 & 2\end{bmatrix}=$ _____			
	A.	$\begin{bmatrix}3 & 1\\ 6 & 8\end{bmatrix}$	B.	$\begin{bmatrix}4 & 2\\ 5 & 6\end{bmatrix}$
	C.	$\begin{bmatrix}4 & 5\\ 2 & 6\end{bmatrix}$	D.	$\begin{bmatrix}2 & 0\\ -1 & 2\end{bmatrix}$
૪.	$\begin{bmatrix}3 & 1\\ 2 & 4\end{bmatrix}+\begin{bmatrix}1 & 1\\ 3 & 2\end{bmatrix}=$ _____			
	A.	$\begin{bmatrix}3 & 1\\ 6 & 8\end{bmatrix}$	B.	$\begin{bmatrix}4 & 2\\ 5 & 6\end{bmatrix}$
	C.	$\begin{bmatrix}4 & 5\\ 2 & 6\end{bmatrix}$	D.	$\begin{bmatrix}2 & 0\\ -1 & 2\end{bmatrix}$
5.	If $A=\begin{bmatrix}-2 & 3 & -1\\ 4 & 2 & 5\end{bmatrix}$ then order of A^T is _____			
	A.	2×3	B.	3×3
	C.	2×2	D.	3×2
૫.	જો $A=\begin{bmatrix}-2 & 3 & -1\\ 4 & 2 & 5\end{bmatrix}$ તો A^T ની કક્ષા _____ છે.			
	A.	2×3	B.	3×3
	C.	2×2	D.	3×2
6.	For matrices A and B, $(A+B)^T=$ _____			
	A.	A^T+B	B.	$A+B^T$
	C.	$B+A$	D.	A^T+B^T
૬.	શ્રેણિક A અને B માટે $(A+B)^T=$ _____			
	A.	A^T+B	B.	$A+B^T$
	C.	$B+A$	D.	A^T+B^T
7.	If $\begin{bmatrix}x-2 & 5\\ 3 & 4\end{bmatrix}=\begin{bmatrix}4 & 5\\ 3 & 4\end{bmatrix}$ then $x=$ ____			
	A.	-2	B.	4
	C.	6	D.	2
૭.	જો $\begin{bmatrix}x-2 & 5\\ 3 & 4\end{bmatrix}=\begin{bmatrix}4 & 5\\ 3 & 4\end{bmatrix}$ તો $x=$ ____			
	A.	-2	B.	4
	C.	6	D.	2

8.	Order of Matrix $\begin{bmatrix} 3 & 2 \\ 5 & 7 \\ 8 & 9 \end{bmatrix}$ is _____			
	A.	3×2	B.	2×3
	C.	6	D.	3×3
૮.	શ્રેણિક $\begin{bmatrix} 3 & 2 \\ 5 & 7 \\ 8 & 9 \end{bmatrix}$ ની કક્ષા _____ છે			
	A.	3×2	B.	2×3
	C.	6	D.	3×3
9.	For symmetric matrix $A^T =$ _____			
	A.	$-A$	B.	A
	C.	A^T	D.	$-A^T$
૯.	સંમિત શ્રેણિક માટે $A^T =$ _____			
	A.	$-A$	B.	A
	C.	A^T	D.	$-A^T$
10.	Matrix $I_2 =$ _____			
	A.	$\begin{bmatrix} 1 & 0 \\ 0 & 1 \end{bmatrix}$	B.	$\begin{bmatrix} 1 & 1 \\ 1 & 1 \end{bmatrix}$
	C.	$\begin{bmatrix} 0 & 1 \\ 1 & 0 \end{bmatrix}$	D.	$\begin{bmatrix} 1 & 0 \\ 1 & 0 \end{bmatrix}$
૧૦.	શ્રેણિક $I_2 =$ _____			
	A.	$\begin{bmatrix} 1 & 0 \\ 0 & 1 \end{bmatrix}$	B.	$\begin{bmatrix} 1 & 1 \\ 1 & 1 \end{bmatrix}$
	C.	$\begin{bmatrix} 0 & 1 \\ 1 & 0 \end{bmatrix}$	D.	$\begin{bmatrix} 1 & 0 \\ 1 & 0 \end{bmatrix}$
11.	If $AB = BA = I$ then $B =$ ____			
	A.	$\frac{1}{A}$	B.	$-A$
	C.	A^{-1}	D.	A^T
૧૧.	જો $AB = BA = I$ હોય તો $B =$ ____			
	A.	$\frac{1}{A}$	B.	$-A$
	C.	A^{-1}	D.	A^T
12.	For matrices $A_{2\times3}$ and $B_{3\times2}$, order of matrix AB is _____.			
	A.	3×3	B.	3×2
	C.	2×3	D.	2×2
૧૨.	શ્રેણિક $A_{2\times3}$ અને $B_{3\times2}$ માટે શ્રેણિક AB ની કક્ષા _____ છે.			
	A.	3×3	B.	3×2
	C.	2×3	D.	2×2

13.	If $A=\begin{bmatrix}1 & 2\\ 2 & 1\end{bmatrix}$ then $A^2=$ _____			
	A.	$\begin{bmatrix}5 & 4\\ 4 & 5\end{bmatrix}$	B.	$\begin{bmatrix}1 & 4\\ 4 & 1\end{bmatrix}$
	C.	$\begin{bmatrix}3 & 4\\ 4 & 3\end{bmatrix}$	D.	$\begin{bmatrix}5 & 2\\ 2 & 5\end{bmatrix}$
૧૩.	જો $A=\begin{bmatrix}1 & 2\\ 2 & 1\end{bmatrix}$ હોય તો $A^2=$ _____			
	A.	$\begin{bmatrix}5 & 4\\ 4 & 5\end{bmatrix}$	B.	$\begin{bmatrix}1 & 4\\ 4 & 1\end{bmatrix}$
	C.	$\begin{bmatrix}3 & 4\\ 4 & 3\end{bmatrix}$	D.	$\begin{bmatrix}5 & 2\\ 2 & 5\end{bmatrix}$
14.	If $A=\begin{bmatrix}3 & 1\\ 2 & 5\end{bmatrix}$ then $adjA=$ _____			
	A.	$\begin{bmatrix}3 & -1\\ -2 & 5\end{bmatrix}$	B.	$\begin{bmatrix}5 & -1\\ -2 & 3\end{bmatrix}$
	C.	$\begin{bmatrix}-3 & 2\\ 1 & -5\end{bmatrix}$	D.	$\begin{bmatrix}5 & -2\\ -1 & 3\end{bmatrix}$
૧૪.	જો $A=\begin{bmatrix}3 & 1\\ 2 & 5\end{bmatrix}$ હોય તો $adjA=$ _____			
	A.	$\begin{bmatrix}3 & -1\\ -2 & 5\end{bmatrix}$	B.	$\begin{bmatrix}5 & -1\\ -2 & 3\end{bmatrix}$
	C.	$\begin{bmatrix}-3 & 2\\ 1 & -5\end{bmatrix}$	D.	$\begin{bmatrix}5 & -2\\ -1 & 3\end{bmatrix}$
15.	For unit matrix I, $AI=$ _____			
	A.	A^{-1}	B.	A
	C.	I	D.	$adjA$
૧૫.	એકમ શ્રેણિક I માટે $AI=$ _____			
	A.	A^{-1}	B.	A
	C.	I	D.	$adjA$
16.	$\begin{bmatrix}1 & 3\\ 2 & 4\end{bmatrix}\begin{bmatrix}4 & 1\\ 2 & 3\end{bmatrix}=$ _____			
	A.	$\begin{bmatrix}4 & 3\\ 4 & 12\end{bmatrix}$	B.	$\begin{bmatrix}7 & 8\\ 12 & 16\end{bmatrix}$
	C.	$\begin{bmatrix}3 & 4\\ 8 & 6\end{bmatrix}$	D.	$\begin{bmatrix}10 & 10\\ 16 & 14\end{bmatrix}$
૧૬.	$\begin{bmatrix}1 & 3\\ 2 & 4\end{bmatrix}\begin{bmatrix}4 & 1\\ 2 & 3\end{bmatrix}=$ _____			
	A.	$\begin{bmatrix}4 & 3\\ 4 & 12\end{bmatrix}$	B.	$\begin{bmatrix}7 & 8\\ 12 & 16\end{bmatrix}$
	C.	$\begin{bmatrix}3 & 4\\ 8 & 6\end{bmatrix}$	D.	$\begin{bmatrix}10 & 10\\ 16 & 14\end{bmatrix}$

17.	$\frac{d}{dx}\left(e^x\right) =$ _____			
	A.	xe^{x-1}	B.	$\log_e x$
	C.	e^x	D.	x
๑๗.	$\frac{d}{dx}\left(e^x\right) =$ _____			
	A.	xe^{x-1}	B.	$\log_e x$
	C.	e^x	D.	x
18.	$\frac{d}{dx}\left(2^x\right) =$ _____			
	A.	2^x	B.	$x2^{x-1}$
	C.	$\frac{2^x}{\log_e 2}$	D.	$2^x \log_e 2$
๑๘.	$\frac{d}{dx}\left(2^x\right) =$ _____			
	A.	2^x	B.	$x2^{x-1}$
	C.	$\frac{2^x}{\log_e 2}$	D.	$2^x \log_e 2$
19.	$\frac{d}{dx}\left(x^3+5x+7\right) =$ _____			
	A.	$3x^2+5$	B.	$3x^4+5x^2+7x$
	C.	$3x^2-5$	D.	$3x^2$
๑๙.	$\frac{d}{dx}\left(x^3+5x+7\right) =$ _____			
	A.	$3x^2+5$	B.	$3x^4+5x^2+7x$
	C.	$3x^2-5$	D.	$3x^2$
20.	$\frac{d}{dx}\left(\tan x\right) =$ _____			
	A.	$\tan x \sec x$	B.	$\tan^2 x$
	C.	$\sec x$	D.	$\sec^2 x$
๒๐.	$\frac{d}{dx}\left(\tan x\right) =$ _____			
	A.	$\tan x \sec x$	B.	$\tan^2 x$
	C.	$\sec x$	D.	$\sec^2 x$
21.	$\frac{d}{dx}\left(\log_e x\right) =$ _____			
	A.	e^x	B.	$\frac{1}{x}$
	C.	x	D.	x^e
๒๑.	$\frac{d}{dx}\left(\log_e x\right) =$ _____			
	A.	e^x	B.	$\frac{1}{x}$
	C.	x	D.	x^e

22.	$\frac{d}{dx}(uv) =$ _____			
	A.	$v\frac{du}{dx}+u\frac{dv}{dx}$	B.	$v\frac{du}{dx}-u\frac{dv}{dx}$
	C.	$\frac{du}{dx}\frac{dv}{dx}$	D.	$\frac{v\frac{du}{dx}-u\frac{dv}{dx}}{v^2}$
૨૨.	$\frac{d}{dx}(uv) =$ _____			
	A.	$v\frac{du}{dx}+u\frac{dv}{dx}$	B.	$v\frac{du}{dx}-u\frac{dv}{dx}$
	C.	$\frac{du}{dx}\frac{dv}{dx}$	D.	$\frac{v\frac{du}{dx}-u\frac{dv}{dx}}{v^2}$
23.	$\frac{d}{dx}\left(\sin^2 x+\cos^2 x\right) =$ _____			
	A.	0	B.	1
	C.	$2\sin x\cos x$	D.	$2\sin x+2\cos x$
૨૩.	$\frac{d}{dx}\left(\sin^2 x+\cos^2 x\right) =$ _____			
	A.	0	B.	1
	C.	$2\sin x\cos x$	D.	$2\sin x+2\cos x$
24.	$\frac{d}{dx}\left(\sqrt{x}\right) =$ _____			
	A.	$2\sqrt{x}$	B.	$\frac{\sqrt{x}}{2}$
	C.	$\frac{1}{2\sqrt{x}}$	D.	$\frac{-1}{2\sqrt{x}}$
૨૪.	$\frac{d}{dx}\left(\sqrt{x}\right) =$ _____			
	A.	$2\sqrt{x}$	B.	$\frac{\sqrt{x}}{2}$
	C.	$\frac{1}{2\sqrt{x}}$	D.	$\frac{-1}{2\sqrt{x}}$
25.	$\frac{d}{dx}(\sin 2x) =$ _____			
	A.	$2\sin 2x$	B.	$-2\cos 2x$
	C.	$\cos 2x$	D.	$2\cos 2x$
૨૫.	$\frac{d}{dx}(\sin 2x) =$ _____			
	A.	$2\sin 2x$	B.	$-2\cos 2x$
	C.	$\cos 2x$	D.	$2\cos 2x$
26.	If $y=\tan\theta$ and $x=\sec\theta$ then $\frac{dy}{dx} =$ _____			
	A.	$sec\theta$	B.	$\cos ec\theta$
	C.	$sec\theta\tan\theta$	D.	$\sin\theta$
૨૬.	જો $y=\tan\theta$ અને $x=\sec\theta$ તો $\frac{dy}{dx} =$ _____			
	A.	$sec\theta$	B.	$\cos ec\theta$
	C.	$sec\theta\tan\theta$	D.	$\sin\theta$

27.	$\frac{d}{dx}\left(\log_e(\sin x)\right) =$ _____			
	A.	$\tan x$	B.	$\cos ecx$
	C.	$\log_e(\cos x)$	D.	$\cot x$
২৭.	$\frac{d}{dx}\left(\log_e(\sin x)\right) =$ _____			
	A.	$\tan x$	B.	$\cos ecx$
	C.	$\log_e(\cos x)$	D.	$\cot x$
28.	$\frac{d}{dx}\left(x\cos x\right) =$ _____			
	A.	$-\sin x$	B.	$\cos x - x\sin x$
	C.	$x - \sin x$	D.	$-x\sin x$
২৮.	$\frac{d}{dx}\left(x\cos x\right) =$ _____			
	A.	$-\sin x$	B.	$\cos x - x\sin x$
	C.	$x - \sin x$	D.	$-x\sin x$
29.	$\frac{d}{dx}\left(\sin^2 x\right) =$ _____			
	A.	$2\sin x\cos x$	B.	$2\sin x$
	C.	$\cos^2 x$	D.	$2\cos x$
২৯.	$\frac{d}{dx}\left(\sin^2 x\right) =$ _____			
	A.	$2\sin x\cos x$	B.	$2\sin x$
	C.	$\cos^2 x$	D.	$2\cos x$
30.	$\frac{d^2}{dx^2}\left(x^5\right) =$ _____			
	A.	$20x^3$	B.	$5x^4$
	C.	$20x^4$	D.	$5x^3$
৩০.	$\frac{d^2}{dx^2}\left(x^5\right) =$ _____			
	A.	$20x^3$	B.	$5x^4$
	C.	$20x^4$	D.	$5x^3$
31.	$\frac{d^2}{dx^2}\left(\sin x\right) =$ _____			
	A.	$\cos x$	B.	$\sin x$
	C.	$-\sin x$	D.	$-\cos x$
৩১.	$\frac{d^2}{dx^2}\left(\sin x\right) =$ _____			
	A.	$\cos x$	B.	$\sin x$
	C.	$-\sin x$	D.	$-\cos x$
32.	$\frac{d^2}{dx^2}\left(\log_e x\right) =$ _____			
	A.	$\frac{1}{x}$	B.	$\frac{-1}{x^2}$
	C.	$\frac{-1}{x}$	D.	$\frac{1}{x^2}$

૩૨.	$\frac{d^2}{dx^2}(\log_e x) =$ _____			
	A.	$\frac{1}{x}$	B.	$\frac{-1}{x^2}$
	C.	$\frac{-1}{x}$	D.	$\frac{1}{x^2}$
33.	$\int x^3 dx =$ _____			
	A.	$3x^2 + c$	B.	$4x^4 + c$
	C.	$\frac{x^2}{2} + c$	D.	$\frac{x^4}{4} + c$
૩૩.	$\int x^3 dx =$ _____			
	A.	$3x^2 + c$	B.	$4x^4 + c$
	C.	$\frac{x^2}{2} + c$	D.	$\frac{x^4}{4} + c$
34.	$\int e^x dx =$ _____.			
	A.	$-e^x + c$	B.	$xe^x + c$
	C.	$xe^{x-1} + c$	D.	$e^x + c$
૩૪.	$\int e^x dx =$ _____.			
	A.	$-e^x + c$	B.	$xe^x + c$
	C.	$xe^{x-1} + c$	D.	$e^x + c$
35.	$\int \frac{1}{x} dx =$ _____.			
	A.	$\frac{1}{x^2} + c$	B.	$\frac{-2}{x^2} + c$
	C.	$\log_e \lvert x \rvert + c$	D.	$-\log_e x + c$
૩૫.	$\int \frac{1}{x} dx =$ _____.			
	A.	$\frac{1}{x^2} + c$	B.	$\frac{-2}{x^2} + c$
	C.	$\log_e \lvert x \rvert + c$	D.	$-\log_e x + c$
36.	$\int \sec^2 x - \tan^2 x dx =$ _____.			
	A.	$-x + c$	B.	$x + c$
	C.	$\tan x - \sec x + c$	D.	$\tan x - \tan x \sec x + c$
૩૬.	$\int \sec^2 x - \tan^2 x dx =$ _____.			
	A.	$-x + c$	B.	$x + c$
	C.	$\tan x - \sec x + c$	D.	$\tan x - \tan x \sec x + c$
37.	$\int \sin x dx =$ _____.			
	A.	$-\cos x + c$	B.	$\sin x + c$
	C.	$-\sin x + c$	D.	$\cos x + c$
૩૭.	$\int \sin x dx =$ _____.			
	A.	$-\cos x + c$	B.	$\sin x + c$
	C.	$-\sin x + c$	D.	$\cos x + c$
38.	$\int (3x^2 - 6x + 7) dx =$ _____.			
	A.	$9x^3 - 6x^2 + 7x + c$	B.	$6x^3 - 3x^2 + 7x + c$
	C.	$x^3 - 3x^2 + 7x + c$	D.	$6x - 6 + c$

३८.	$\int (3x^2-6x+7)dx =$ ____.			
	A.	$9x^3-6x^2+7x+c$	B.	$6x^3-3x^2+7x+c$
	C.	x^3-3x^2+7x+c	D.	$6x-6+c$
39.	$\int xe^x dx =$ ____.			
	A.	$(x-1)e^x+c$	B.	$x-e^x+c$
	C.	$(x+1)e^x+c$	D.	$x+e^x+c$
३९.	$\int xe^x dx =$ ____.			
	A.	$(x-1)e^x+c$	B.	$x-e^x+c$
	C.	$(x+1)e^x+c$	D.	$x+e^x+c$
40.	$\int \tan^2 x dx =$ ____.			
	A.	$2\tan x\sec^2 x+c$	B.	$\tan x+\sec^2 x+c$
	C.	$\sec^2 x+c$	D.	$\tan x-x+c$
४०.	$\int \tan^2 x dx =$ ____.			
	A.	$2\tan x\sec^2 x+c$	B.	$\tan x+\sec^2 x+c$
	C.	$\sec^2 x+c$	D.	$\tan x-x+c$
41.	$\int \frac{2x}{x^2+1} dx =$ ____.			
	A.	$\tan^{-1} x+c$	B.	$\cot^{-1} x+c$
	C.	$\log_e(x^2+1)+c$	D.	$(x^2+1)^2+c$
४१.	$\int \frac{2x}{x^2+1} dx =$ ____.			
	A.	$\tan^{-1} x+c$	B.	$\cot^{-1} x+c$
	C.	$\log_e(x^2+1)+c$	D.	$(x^2+1)^2+c$
42.	$\int \sin^3 x\cos x dx =$ ____.			
	A.	$3\sin^2 x\cos x-\sin^4 x+c$	B.	$\frac{\sin^4 x}{4}+c$
	C.	$\frac{\sin^2 x}{2}+c$	D.	$4\sin^4 x+c$
४२.	$\int \sin^3 x\cos x dx =$ ____.			
	A.	$3\sin^2 x\cos x-\sin^4 x+c$	B.	$\frac{\sin^4 x}{4}+c$
	C.	$\frac{\sin^2 x}{2}+c$	D.	$4\sin^4 x+c$
43.	$\int_{-1}^{1} x^5 dx =$ _____			
	A.	2	B.	0
	C.	$\frac{1}{3}$	D.	1
४३.	$\int_{-1}^{1} x^5 dx =$ _____			
	A.	2	B.	0
	C.	$\frac{1}{3}$	D.	1

44.	$\int_1^2 \frac{1}{x} dx = \_\_\_\_\_$			
	A.	$\log_e 3$	B.	1
	C.	$\log_e 2$	D.	2
૪૪.	$\int_1^2 \frac{1}{x} dx = \_\_\_\_\_$			
	A.	$\log_e 3$	B.	1
	C.	$\log_e 2$	D.	2
45.	$\int_0^1 4x^3 dx = \_\_\_\_\_$			
	A.	1	B.	2
	C.	$\frac{1}{3}$	D.	$\frac{1}{4}$
૪૫.	$\int_0^1 4x^3 dx = \_\_\_\_\_$			
	A.	1	B.	2
	C.	$\frac{1}{3}$	D.	$\frac{1}{4}$
46.	$\int (f(x))^n f'(x) dx = \_\_\_\_\_$			
	A.	$\frac{(f(x))^{n+1}}{n+1} + c$	B.	$(n+1)\log_e(f(x)) + c$
	C.	$\log_e \lvert f(x) \rvert + c$	D.	$n(f(x))^{n-1} + c$
૪૬.	$\int (f(x))^n f'(x) dx = \_\_\_\_\_$			
	A.	$\frac{(f(x))^{n+1}}{n+1} + c$	B.	$(n+1)\log_e(f(x)) + c$
	C.	$\log_e \lvert f(x) \rvert + c$	D.	$n(f(x))^{n-1} + c$
47.	Order of $\frac{d^2y}{dx^2} + \frac{dy}{dx} - 3y = 0$ is _____.			
	A.	3	B.	1
	C.	0	D.	2
૪૭.	$\frac{d^2y}{dx^2} + \frac{dy}{dx} - 3y = 0$ ની કક્ષા _____ છે.			
	A.	3	B.	1
	C.	0	D.	2
48.	Degree of $\left(\frac{d^2y}{dx^2}\right)^3 + \left(\frac{d^2y}{dx^2}\right)^2 + \left(\frac{dy}{dx}\right)^2 - y = 0$ is _____.			
	A.	2	B.	3
	C.	1	D.	6
૪૮.	$\left(\frac{d^2y}{dx^2}\right)^3 + \left(\frac{d^2y}{dx^2}\right)^2 + \left(\frac{dy}{dx}\right)^2 - y = 0$ નું પરિમાણ ____ છે.			
	A.	2	B.	3
	C.	1	D.	6

49.	Order and Degree of $\left(\frac{d^3y}{dx^3}\right)^3+\left(\frac{d^2y}{dx^2}\right)^4+\left(\frac{dy}{dx}\right)^5=0$ is _____ and _____.			
	A.	2 and 4	B.	3 and 5
	C.	3 and 3	D.	3 and 4
૪૯.	$\left(\frac{d^3y}{dx^3}\right)^3+\left(\frac{d^2y}{dx^2}\right)^4+\left(\frac{dy}{dx}\right)^5=0$ ની કક્ષા અને પરિમાણ ____ અને ____છે			
	A.	2 અને 4	B.	3 અને 5
	C.	3 અને 3	D.	3 અને 4
50.	Degree of $\left(\frac{d^2y}{dx^2}\right)^4+\left(\frac{dy}{dx}\right)^5+y=0$ is _____			
	A.	2	B.	4
	C.	1	D.	5
૫૦.	$\left(\frac{d^2y}{dx^2}\right)^4+\left(\frac{dy}{dx}\right)^5+y=0$ નું પરિમાણ ____ છે.			
	A.	2	B.	4
	C.	1	D.	5
51.	Solution of $dy=dx$ is _____.			
	A.	$y+x=c$	B.	$y=e^x+c$
	C.	$y=\log_e x+c$	D.	$y=x+c$
૫૧.	$dy=dx$ નો ઉકેલ _____ છે.			
	A.	$y+x=c$	B.	$y=e^x+c$
	C.	$y=\log_e x+c$	D.	$y=x+c$
52.	Solution of $2ydy=dx$ is _____.			
	A.	$y^2=x+c$	B.	$y=x+c$
	C.	$y^2+x=c$	D.	$y^2x=c$
૫૨.	$2ydy=dx$ નો ઉકેલ _____ છે.			
	A.	$y^2=x+c$	B.	$y=x+c$
	C.	$y^2+x=c$	D.	$y^2x=c$
53.	_____ is differential equation of first order and first degree.			
	A.	$\left(\frac{d^2y}{dx^2}\right)^2+\frac{dy}{dx}-y=0$	B.	$\frac{d^2y}{dx^2}+\frac{dy}{dx}+4y=0$
	C.	$\frac{dy}{dx}+xy=x$	D.	$\left(\frac{dy}{dx}\right)^2+xy=x$
૫૩.	_____ એ પ્રથમ કક્ષા અને પ્રથમ પરિમાણ વાળું વિકલ સમીકરણ છે.			
	A.	$\left(\frac{d^2y}{dx^2}\right)^2+\frac{dy}{dx}-y=0$	B.	$\frac{d^2y}{dx^2}+\frac{dy}{dx}+4y=0$
	C.	$\frac{dy}{dx}+xy=x$	D.	$\left(\frac{dy}{dx}\right)^2+xy=x$

54.	_____ is not differential equation.			
	A.	$y+2x=0$	B.	$\frac{d^2y}{dx^2}+\frac{dy}{dx}=0$
	C.	$\frac{dy}{dx}+3y=x$	D.	$\frac{d^2y}{dx^2}+y=0$
૫૪.	_____ એ વિકલ સમીકરણ નથી.			
	A.	$y+2x=0$	B.	$\frac{d^2y}{dx^2}+\frac{dy}{dx}=0$
	C.	$\frac{dy}{dx}+3y=x$	D.	$\frac{d^2y}{dx^2}+y=0$
55.	Integrating factor (I.F.) of $\frac{dy}{dx}+y=8x$ is _____			
	A.	e^{-x}	B.	$\log_e x$
	C.	x	D.	e^x
૫૫.	$\frac{dy}{dx}+y=8x$ નો સંકલ્યકારક અવયવ _____ છે.			
	A.	e^{-x}	B.	$\log_e x$
	C.	x	D.	e^x
56.	Integrating factor (I.F.) of $\frac{dy}{dx}-\frac{y}{x}=e^x$ is _____			
	A.	x	B.	$\frac{1}{x}$
	C.	e^x	D.	$\log_e x$
૫૬.	$\frac{dy}{dx}-\frac{y}{x}=e^x$ નો સંકલ્યકારક અવયવ _____ છે.			
	A.	x	B.	$\frac{1}{x}$
	C.	e^x	D.	$\log_e x$
57.	Integrating factor (I.F.) of $\frac{dy}{dx}+\frac{2y}{x}=\sin x$ is _____			
	A.	x^2	B.	e^{2x}
	C.	$\frac{1}{x}$	D.	x
૫૭.	$\frac{dy}{dx}+\frac{2y}{x}=\sin x$ નો સંકલ્યકારક અવયવ _____ છે.			
	A.	x^2	B.	e^{2x}
	C.	$\frac{1}{x}$	D.	x
58.	Integrating factor (I.F.) of $\frac{dy}{dx}+y\cot x=\sec x$ is _____			
	A.	$\cos x$	B.	$\cot x$
	C.	$\sin x$	D.	$\cos ecx$
૫૮.	$\frac{dy}{dx}+y\cot x=\sec x$ નો સંકલ્યકારક અવયવ _____ છે.			
	A.	$\cos x$	B.	$\cot x$
	C.	$\sin x$	D.	$\cos ecx$

59.	Formula to find Mean of ungrouped data is _____			
	A.	$\frac{\sum fx_i}{n}$	B.	$\frac{\sum fx_i}{\sum x_i}$
	C.	$\frac{\sum x_i}{n}$	D.	None of above
૫૯.	અવર્ગીકૃત માહિતી નાં મધ્યક નું સૂત્ર _____ છે			
	A.	$\frac{\sum fx_i}{n}$	B.	$\frac{\sum fx_i}{\sum x_i}$
	C.	$\frac{\sum x_i}{n}$	D.	એકપણ નહીં
60.	Mean of 3,6,7,4,5 is _____			
	A.	7	B.	5
	C.	6	D.	4
૬૦.	3,6,7,4,5 નો મધ્યક _____ છે			
	A.	7	B.	5
	C.	6	D.	4
61.	Mean of first seven natural numbers is _____			
	A.	5	B.	3.5
	C.	6	D.	4
૬૧.	પ્રથમ સાત પ્રાકૃતિક સંખ્યાઓ નો મધ્યક _____ છે			
	A.	5	B.	3.5
	C.	6	D.	4
62.	Mean of date is $\overline{X}$. If "a" is added in each data then new mean is _____ .			
	A.	$\overline{X} - a$	B.	$\overline{X} + a$
	C.	$\overline{X}$	D.	$a\overline{X}$
૬૨.	માહિતી નો મધ્યક $\overline{X}$ છે. પ્રત્યેક ડેટા માં "a" ઉમેરતા નવો મધ્યક _____ છે.			
	A.	$\overline{X} - a$	B.	$\overline{X} + a$
	C.	$\overline{X}$	D.	$a\overline{X}$
63.	Formula to find Mean of grouped data is _____			
	A.	$\frac{\sum f_i x_i}{n}$	B.	$\frac{\sum x_i}{n}$
	C.	$\frac{\sum f_i x_i}{\sum x_i}$	D.	$\frac{\sum x_i^2}{n}$
૬૩.	વર્ગીકૃત માહિતી નાં મધ્યક નું સૂત્ર _____ છે			
	A.	$\frac{\sum f_i x_i}{n}$	B.	$\frac{\sum x_i}{n}$
	C.	$\frac{\sum f_i x_i}{\sum x_i}$	D.	$\frac{\sum x_i^2}{n}$
64.	Formula to find standard deviation of grouped data is _____			
	A.	$\frac{\sum f_i \lvert x_i - \overline{X} \rvert}{n}$	B.	$\frac{\sum f_i \left(x_i - \overline{X}\right)^2}{n}$
	C.	$\sqrt{\frac{\sum f_i (x_i - \overline{X})^2}{n}}$	D.	$\frac{\sum f_i x_i}{n}$

૬૪.	વર્ગીકૃત માહિતી નાં પ્રમાણિત વિચલન નું સૂત્ર _____ છે			
	A.	$\frac{\Sigma f_i \lvert x_i - \overline{X} \rvert}{n}$	B.	$\frac{\Sigma f_i \left(x_i - \overline{X}\right)^2}{n}$
	C.	$\sqrt{\frac{\Sigma f_i (x_i - \overline{X})^2}{n}}$	D.	$\frac{\Sigma f_i x_i}{n}$
65.	Formula to find mean deviation of ungrouped data is _____			
	A.	$\frac{\Sigma f_i \lvert x_i - \overline{X} \rvert}{n}$	B.	$\frac{\Sigma f_i \left(x_i - \overline{X}\right)^2}{n}$
	C.	$\frac{\Sigma \lvert x_i - \overline{X} \rvert}{n}$	D.	$\frac{\Sigma \left(x_i - \overline{X}\right)^2}{n}$
૬૫.	અવર્ગીકૃત માહિતી નાં સરેરાશ વિચલન નું સૂત્ર _____ છે			
	A.	$\frac{\Sigma f_i \lvert x_i - \overline{X} \rvert}{n}$	B.	$\frac{\Sigma f_i \left(x_i - \overline{X}\right)^2}{n}$
	C.	$\frac{\Sigma \lvert x_i - \overline{X} \rvert}{n}$	D.	$\frac{\Sigma \left(x_i - \overline{X}\right)^2}{n}$
66.	Mean of 7,9,8,10,6,11,12 is _____			
	A.	10	B.	9
	C.	9.5	D.	10.5
૬૬.	7,9,8,10,6,11,12 નો મધ્યક _____ છે			
	A.	10	B.	9
	C.	9.5	D.	10.5
67.	If Mean of 12,10,9,11,a,8 is 10 then a= _____			
	A.	11	B.	9
	C.	12	D.	10
૬૭.	જો 12,10,9,11,a,8 નો મધ્યક 10 હોય તો a= _____			
	A.	11	B.	9
	C.	12	D.	10
68.	If Mean of 5,8,9, k,6,7,8 is 7 then k= _____			
	A.	7	B.	8
	C.	9	D.	6
૬૮.	જો 5,8,9, k,6,7,8 નો મધ્યક 7 હોય તો k= _____			
	A.	7	B.	8
	C.	9	D.	6
69.	Standard deviation of 5,5,5,5,5,5 is _____			
	A.	0	B.	5
	C.	1	D.	6
૬૯.	5,5,5,5,5,5 નું પ્રમાણિત વિચલન _____ છે.			
	A.	0	B.	5
	C.	1	D.	6
70.	Mean deviation of 6,4,6,4,6,4,6,4,6,4 is _____			
	A.	2	B.	0
	C.	1	D.	5
૭૦.	6,4,6,4,6,4,6,4,6,4 નું સરેરાશ વિચલન _____ છે.			
	A.	2	B.	0
	C.	1	D.	5