

GUJARAT TECHNOLOGICAL UNIVERSITY**Diploma Engineering – SEMESTER – 2(CtoD) New – EXAMINATION – Summer-2025****Subject Code: C4320002****Date: 05-06-2025****Subject Name: Engineering 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 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. પાશ્વ અંકે દિવડાવો.			
1.	Order of matrix $\begin{bmatrix} 3 & -2 & 0 & 4 \\ 5 & 1 & -3 & 8 \end{bmatrix}$ is ____.			
	A.	2×4	B.	4×2
	C.	4×4	D.	2×2
૧.	શ્રેણિક $\begin{bmatrix} 3 & -2 & 0 & 4 \\ 5 & 1 & -3 & 8 \end{bmatrix}$ ની ક્રમ ____ છે.			
	A.	2×4	B.	4×2
	C.	4×4	D.	2×2
2.	Value of matrix $\begin{bmatrix} 1 & 3 \\ 2 & 4 \end{bmatrix}$ is ____.			
	A.	-2	B.	2
	C.	10	D.	None
૨.	શ્રેણિક $\begin{bmatrix} 1 & 3 \\ 2 & 4 \end{bmatrix}$ ની કિમત ____ છે.			
	A.	-2	B.	2
	C.	10	D.	એક પણ નહિ
3.	If $\begin{bmatrix} -2 & x \\ 3 & 0 \end{bmatrix} = \begin{bmatrix} -2 & -1 \\ y & 0 \end{bmatrix}$ then $(x, y) =$ ____.			
	A.	$(-2, 3)$	B.	$(2, 3)$
	C.	$(-1, 3)$	D.	$(1, 3)$
૩.	જો $\begin{bmatrix} -2 & x \\ 3 & 0 \end{bmatrix} = \begin{bmatrix} -2 & -1 \\ y & 0 \end{bmatrix}$ હોય તો $(x, y) =$ ____.			
	A.	$(-2, 3)$	B.	$(2, 3)$
	C.	$(-1, 3)$	D.	$(1, 3)$
4.	$\begin{bmatrix} 1 & 4 & -5 \\ 4 & 0 & 7 \\ -5 & 7 & -2 \end{bmatrix}$ is a ____ matrix.			
	A.	Identity	B.	Symmetric
	C.	Skew symmetric	D.	Diagonal

૪.	$\begin{bmatrix} 1 & 4 & -5 \\ 4 & 0 & 7 \\ -5 & 7 & -2 \end{bmatrix}$ એ _____ શ્રેણિક છે.			
	A.	એકમ શ્રેણિક	B.	સંમિત શ્રેણિક
	C.	વિસંમિત શ્રેણિક	D.	વિકર્ણ શ્રેણિક
5.	If $A = \begin{bmatrix} 5 & -2 \\ 0 & 0 \end{bmatrix}$ then $A + A^T = \underline{\hspace{2cm}}$.			
	A.	$\begin{bmatrix} 5 & -2 \\ -2 & 5 \end{bmatrix}$	B.	$\begin{bmatrix} 10 & -4 \\ 0 & 0 \end{bmatrix}$
	C.	$\begin{bmatrix} 10 & -2 \\ -2 & 10 \end{bmatrix}$	D.	$\begin{bmatrix} 10 & -2 \\ -2 & 0 \end{bmatrix}$
૫.	જો $A = \begin{bmatrix} 5 & -2 \\ 0 & 0 \end{bmatrix}$ હોય તો $A + A^T = \underline{\hspace{2cm}}$.			
	A.	$\begin{bmatrix} 5 & -2 \\ -2 & 5 \end{bmatrix}$	B.	$\begin{bmatrix} 10 & -4 \\ 0 & 0 \end{bmatrix}$
	C.	$\begin{bmatrix} 10 & -2 \\ -2 & 10 \end{bmatrix}$	D.	$\begin{bmatrix} 10 & -2 \\ -2 & 0 \end{bmatrix}$
6.	For $A = \begin{bmatrix} 3 & 2 \\ 1 & 6 \end{bmatrix}$ and $B = \begin{bmatrix} 4 & 5 \\ 3 & 1 \end{bmatrix}$, $2A - B = \underline{\hspace{2cm}}$			
	A.	$\begin{bmatrix} 2 & 1 \\ 1 & 11 \end{bmatrix}$	B.	$\begin{bmatrix} 2 & 9 \\ 3 & 11 \end{bmatrix}$
	C.	$\begin{bmatrix} 2 & -1 \\ -1 & 11 \end{bmatrix}$	D.	$\begin{bmatrix} 2 & 1 \\ -1 & -11 \end{bmatrix}$
૬.	$A = \begin{bmatrix} 3 & 2 \\ 1 & 6 \end{bmatrix}$ અને $B = \begin{bmatrix} 4 & 5 \\ 3 & 1 \end{bmatrix}$ માટે $2A - B = \underline{\hspace{2cm}}$			
	A.	$\begin{bmatrix} 2 & 1 \\ 1 & 11 \end{bmatrix}$	B.	$\begin{bmatrix} 2 & 9 \\ 3 & 11 \end{bmatrix}$
	C.	$\begin{bmatrix} 2 & -1 \\ -1 & 11 \end{bmatrix}$	D.	$\begin{bmatrix} 2 & 1 \\ -1 & -11 \end{bmatrix}$
7.	$I^{10} = \underline{\hspace{2cm}}$			
	A.	$10I$	B.	10
	C.	11	D.	I
9.	$I^{10} = \underline{\hspace{2cm}}$			
	A.	$10I$	B.	10
	C.	11	D.	I
8.	If the order of matrices A and B are 4×3 and 3×5 respectively then the order of matrix AB is _____.			
	A.	5×4	B.	4×5
	C.	4×3	D.	3×4
૮.	જો શ્રેણિક A નો ક્રમ 4×3 અને B નો ક્રમ 3×5 હોય તો શ્રેણિક AB નો ક્રમ _____ થાય.			
	A.	5×4	B.	4×5
	C.	4×3	D.	3×4
9.	If the order of matrices A and AB are 2×5 and 2×3 respectively then the order of matrix B is _____.			
	A.	2×5	B.	2×3
	C.	5×3	D.	3×5

૯.	જો શ્રેણિક A નો ક્રમ 2×5 અને શ્રેણિક AB નો ક્રમ 2×3 હોય તો શ્રેણિક B નો ક્રમ _____ થાય.			
	A.	2×5	B.	2×3
	C.	5×3	D.	3×5
10.	$(AB)^T = \underline{\hspace{2cm}}$			
	A.	$A^T B^T$	B.	$B^T A^T$
	C.	AB	D.	BA
૧૦.	$(AB)^T = \underline{\hspace{2cm}}$			
	A.	$A^T B^T$	B.	$B^T A^T$
	C.	AB	D.	BA
11.	If $A = \begin{bmatrix} 3 & 1 \\ 0 & 0 \end{bmatrix}$ then $A^2 = \underline{\hspace{2cm}}$.			
	A.	$\begin{bmatrix} 9 & 3 \\ 0 & 0 \end{bmatrix}$	B.	$\begin{bmatrix} 3 & 3 \\ 0 & 0 \end{bmatrix}$
	C.	$\begin{bmatrix} 9 & 3 \\ 3 & 0 \end{bmatrix}$	D.	$\begin{bmatrix} 9 & 1 \\ 0 & 0 \end{bmatrix}$
૧૧.	જો $A = \begin{bmatrix} 3 & 1 \\ 0 & 0 \end{bmatrix}$ હોય તો $A^2 = \underline{\hspace{2cm}}$.			
	A.	$\begin{bmatrix} 9 & 3 \\ 0 & 0 \end{bmatrix}$	B.	$\begin{bmatrix} 3 & 3 \\ 0 & 0 \end{bmatrix}$
	C.	$\begin{bmatrix} 9 & 3 \\ 3 & 0 \end{bmatrix}$	D.	$\begin{bmatrix} 9 & 1 \\ 0 & 0 \end{bmatrix}$
12.	If $A = \begin{bmatrix} 1 & 4 \\ -2 & 3 \end{bmatrix}$ then $\text{adj } A = \underline{\hspace{2cm}}$			
	A.	$\begin{bmatrix} 3 & 4 \\ -2 & 1 \end{bmatrix}$	B.	$\begin{bmatrix} 3 & -4 \\ 2 & 1 \end{bmatrix}$
	C.	$\begin{bmatrix} 3 & -4 \\ 2 & 1 \end{bmatrix}$	D.	$\begin{bmatrix} -3 & -4 \\ 2 & -1 \end{bmatrix}$
૧૨.	જો $A = \begin{bmatrix} 1 & 4 \\ -2 & 3 \end{bmatrix}$ હોય તો $\text{adj } A = \underline{\hspace{2cm}}$			
	A.	$\begin{bmatrix} 3 & 4 \\ -2 & 1 \end{bmatrix}$	B.	$\begin{bmatrix} 3 & -4 \\ 2 & 1 \end{bmatrix}$
	C.	$\begin{bmatrix} 3 & -4 \\ 2 & 1 \end{bmatrix}$	D.	$\begin{bmatrix} -3 & -4 \\ 2 & -1 \end{bmatrix}$
13.	$(A^{-1})^{-1} = \underline{\hspace{2cm}}$			
	A.	A^{-1}	B.	$-A$
	C.	A	D.	I
૧૩.	$(A^{-1})^{-1} = \underline{\hspace{2cm}}$			
	A.	A^{-1}	B.	$-A$
	C.	A	D.	I
14.	If A^{-1} exists then ____.			
	A.	$ A = 0$	B.	$ A \neq 0$
	C.	$ A^T = 0$	D.	None
૧૪.	જો A^{-1} અસ્તિત્વ ધરાવે તો ____ હોય.			

	A.	$ A = 0$	B.	$ A \neq 0$
	C.	$ A^T = 0$	D.	એક પણ નહિ
15.	$A^{-1}A =$			
	A.	A^{-1}	B.	A
	C.	A^2	D.	I
૧૫.	$A^{-1}A =$			
	A.	A^{-1}	B.	A
	C.	A^2	D.	I
16.	If $A = \begin{bmatrix} 4 & 3 \\ 2 & 1 \end{bmatrix}$ then $A^{-1} =$ ____.			
	A.	$\frac{-1}{2} \begin{bmatrix} 1 & -3 \\ -2 & 4 \end{bmatrix}$	B.	$\frac{-1}{2} \begin{bmatrix} -1 & -3 \\ -2 & -4 \end{bmatrix}$
	C.	$\frac{-1}{2} \begin{bmatrix} 4 & 3 \\ 2 & 1 \end{bmatrix}$	D.	$\frac{-1}{2} \begin{bmatrix} -1 & 3 \\ 2 & -4 \end{bmatrix}$
૧૬.	જો $A = \begin{bmatrix} 4 & 3 \\ 2 & 1 \end{bmatrix}$ હોય તો $A^{-1} =$ ____.			
	A.	$\frac{-1}{2} \begin{bmatrix} 1 & -3 \\ -2 & 4 \end{bmatrix}$	B.	$\frac{-1}{2} \begin{bmatrix} -1 & -3 \\ -2 & -4 \end{bmatrix}$
	C.	$\frac{-1}{2} \begin{bmatrix} 4 & 3 \\ 2 & 1 \end{bmatrix}$	D.	$\frac{-1}{2} \begin{bmatrix} -1 & 3 \\ 2 & -4 \end{bmatrix}$
17.	If $f(x) = x^2 + 5x - 2$ then $f'(3) =$ ____.			
	A.	10	B.	11
	C.	22	D.	18
૧૭.	જો $f(x) = x^2 + 5x - 2$ હોય તો $f'(3) =$ ____			
	A.	10	B.	11
	C.	22	D.	18
18.	If $f(x) = e^{3x}$ then $f'(x) =$ ____.			
	A.	$3e^{3x}$	B.	$2e^x$
	C.	$4e^{3x}$	D.	$3e^x$
૧૮.	જો $f(x) = e^{3x}$ હોય તો $f'(x) =$ ____.			
	A.	$3e^{3x}$	B.	$2e^x$
	C.	$4e^{3x}$	D.	$3e^x$
19.	$\frac{d}{dx}(a^x) =$ ____			
	A.	a^x	B.	xa^{x-1}
	C.	$a^x \log_e a$	D.	a^{x-1}
૧૯.	$\frac{d}{dx}(a^x) =$ ____			
	A.	a^x	B.	xa^{x-1}
	C.	$a^x \log_e a$	D.	a^{x-1}
20.	If $y = \log 3$ then $\frac{dy}{dx} =$ ____			
	A.	3	B.	-3
	C.	1	D.	0

૨૦.	જો $y = \log 3$ હોય તો $\frac{dy}{dx} = \underline{\hspace{2cm}}$			
	A.	3	B.	-3
	C.	1	D.	0
21.	If $y = \frac{1}{x}$ then $\frac{dy}{dx} = \underline{\hspace{2cm}}$			
	A.	$\frac{-2}{x^2}$	B.	$\frac{-2}{x}$
	C.	$\frac{-1}{x^2}$	D.	$\frac{2}{(x-1)^2}$
૨૧.	જો $y = \frac{1}{x}$ હોય તો $\frac{dy}{dx} = \underline{\hspace{2cm}}$			
	A.	$\frac{-2}{x^2}$	B.	$\frac{-2}{x}$
	C.	$\frac{-1}{x^2}$	D.	$\frac{2}{(x-1)^2}$
22.	$\frac{d}{dx}(\tan^{-1} x) = \underline{\hspace{2cm}}$			
	A.	$\frac{1}{1+x^2}$	B.	$\frac{1}{\sqrt{1-x^2}}$
	C.	$\frac{1}{\sqrt{x^2-1}}$	D.	$\frac{1}{1-x^2}$
૨૨.	$\frac{d}{dx}(\tan^{-1} x) = \underline{\hspace{2cm}}$			
	A.	$\frac{1}{1+x^2}$	B.	$\frac{1}{\sqrt{1-x^2}}$
	C.	$\frac{1}{\sqrt{x^2-1}}$	D.	$\frac{1}{1-x^2}$
23.	$\frac{d}{dx}(\sec x) = \underline{\hspace{2cm}}$			
	A.	$\sec x$	B.	$\sec x \tan x$
	C.	$\sec^2 x$	D.	$\sec 2x$
૨૩.	$\frac{d}{dx}(\sec x) = \underline{\hspace{2cm}}$			
	A.	$\sec x$	B.	$\sec x \tan x$
	C.	$\sec^2 x$	D.	$\sec 2x$
24.	$\frac{d}{dx}(\cos x) = \underline{\hspace{2cm}}$			
	A.	$-\sin x$	B.	$\cos x$
	C.	x	D.	1
૨૪.	$\frac{d}{dx}(\cos x) = \underline{\hspace{2cm}}$			
	A.	$-\sin x$	B.	$\cos x$
	C.	x	D.	1
25.	If $y = \log x - 8$ then $\frac{dy}{dx} = \underline{\hspace{2cm}}$			
	A.	$\frac{1}{x}$	B.	$\frac{1}{x} - 8x$

	C.	$x-8$	D.	8
૨૫.	જો $y = \log x - 8$ હોય તો $\frac{dy}{dx} = \underline{\hspace{2cm}}$			
	A.	$\frac{1}{x}$	B.	$\frac{1}{x} - 8x$
	C.	$x-8$	D.	8
26.	If $y = x^e + e^x$ then $\frac{dy}{dx} = \underline{\hspace{2cm}}$			
	A.	e^x	B.	$ex^{e-1} + e^x$
	C.	$x^e + e^x$	D.	x^e
૨૬.	જો $y = x^e + e^x$ હોય તો $\frac{dy}{dx} = \underline{\hspace{2cm}}$			
	A.	e^x	B.	$ex^{e-1} + e^x$
	C.	$x^e + e^x$	D.	x^e
27.	If $y = x \log x$ then $\frac{dy}{dx} = \underline{\hspace{2cm}}$			
	A.	$\log x$	B.	$\log x + 1$
	C.	1	D.	x
૨૭.	જો $y = x \log x$ હોય તો $\frac{dy}{dx} = \underline{\hspace{2cm}}$			
	A.	$\log x$	B.	$\log x + 1$
	C.	1	D.	x
28.	If $y = \sin 5x$ then $\frac{dy}{dx} = \underline{\hspace{2cm}}$			
	A.	$5 \sin 5x$	B.	$5 \cos 5x$
	C.	$\cos 5x$	D.	$5 \cos x$
૨૮.	જો $y = \sin 5x$ હોય તો $\frac{dy}{dx} = \underline{\hspace{2cm}}$			
	A.	$5 \sin 5x$	B.	$5 \cos 5x$
	C.	$\cos 5x$	D.	$5 \cos x$
29.	If $2x + 2y = 3$ then $\frac{dy}{dx} = \underline{\hspace{2cm}}$			
	A.	1	B.	-1
	C.	2	D.	-2
૨૯.	જો $2x + 2y = 3$ હોય તો $\frac{dy}{dx} = \underline{\hspace{2cm}}$			
	A.	1	B.	-1
	C.	2	D.	-2
30.	If $x = a \sin \theta, y = a \cos \theta$ where a is a constant then $\frac{dy}{dx} = \underline{\hspace{2cm}}$.			
	A.	$\cot \theta$	B.	$-\cot \theta$
	C.	$-\tan \theta$	D.	$\tan \theta$
૩૦.	જો $x = a \sin \theta, y = a \cos \theta$ જ્યાં a અચલ હોય તો $\frac{dy}{dx} = \underline{\hspace{2cm}}$			
	A.	$\cot \theta$	B.	$-\cot \theta$
	C.	$-\tan \theta$	D.	$\tan \theta$
31.	If the equation of motion is $S = 2t^2 + 2t + 5$ then velocity $v = \underline{\hspace{2cm}}$ at $t = 2$.			
	A.	10	B.	20
	C.	-10	D.	-20
૩૧.	ગતિસૂત્ર $S = 2t^2 + 2t + 5$ હોય તો $t=2$ માટે વેગ $v = \underline{\hspace{2cm}}$.			

	A.	10	B.	20
	C.	-10	D.	-20
32.	The condition for the minimum value of $f(x)$ at $x = x_1$ is ____.			
	A.	$f''(x_1) > 0$	B.	$f''(x_1) = 0$
	C.	$f''(x_1) < 0$	D.	None of these
32.	$x = x_1$ આગળ વિધેય $f(x)$ ની ન્યૂનતમ કિંમત હોવાની શરત ____ છે .			
	A.	$f''(x_1) > 0$	B.	$f''(x_1) = 0$
	C.	$f''(x_1) < 0$	D.	એક પણ નહિ
33.	$\int 5dx = \text{____} + c$			
	A.	0	B.	5
	C.	$5x$	D.	x
33.	$\int 5dx = \text{____} + c$			
	A.	0	B.	5
	C.	$5x$	D.	x
34.	$\int \frac{1}{x} dx = \text{____} + c$			
	A.	x	B.	$-x$
	C.	$-\log x$	D.	$\log x$
34.	$\int \frac{1}{x} dx = \text{____} + c$			
	A.	x	B.	$-x$
	C.	$-\log x$	D.	$\log x$
35.	$\int e^{-x} dx = \text{____} + c$			
	A.	e^{-x}	B.	$-e^{-x}$
	C.	e^x	D.	$-x$
34.	$\int e^{-x} dx = \text{____} + c$			
	A.	e^{-x}	B.	$-e^{-x}$
	C.	e^x	D.	$-x$
36.	$\int \sin x dx = \text{____} + c$			
	A.	$\sin x$	B.	$-\sin x$
	C.	$\cos x$	D.	$-\cos x$
35.	$\int \sin x dx = \text{____} + c$			
	A.	$\sin x$	B.	$-\sin x$
	C.	$\cos x$	D.	$-\cos x$
37.	$\int \sec^2 x dx = \text{____} + c$			
	A.	$\cot x$	B.	$\sec x$
	C.	$\tan x$	D.	$\sec x \tan x$
39.	$\int \sec^2 x dx = \text{____} + c$			
	A.	$\cot x$	B.	$\sec x$
	C.	$\tan x$	D.	$\sec x \tan x$
38.	$\int f'(x) dx = \text{____} + c$			
	A.	$f'(x)$	B.	$f(x)$
	C.	$-f(x)$	D.	$f''(x)$
36.	$\int f'(x) dx = \text{____} + c$			

	A.	$f'(x)$	B.	$f(x)$
	C.	$-f(x)$	D.	$f''(x)$
39.	$\int (\cos^2 x + \sin^2 x) dx = \text{_____} + c$			
	A.	$2 \sin x$	B.	$2 \cos x$
	C.	1	D.	x
39.	$\int (\cos^2 x + \sin^2 x) dx = \text{_____} + c$			
	A.	$2 \sin x$	B.	$2 \cos x$
	C.	1	D.	x
40.	$\int \frac{1}{1+x^2} dx = \text{_____} + c$			
	A.	$\cot^{-1} x$	B.	$\cos^{-1} x$
	C.	$\tan^{-1} x$	D.	$\sin^{-1} x$
40.	$\int \frac{1}{1+x^2} dx = \text{_____} + c$			
	A.	$\cot^{-1} x$	B.	$\cos^{-1} x$
	C.	$\tan^{-1} x$	D.	$\sin^{-1} x$
41.	$\int (3x^2 - 2x + 1) dx = \text{_____} + c$			
	A.	$3x^3 - 2x^2 + x$	B.	$x^3 - x^2 + x$
	C.	$3x^3 - 2x^2 + 1$	D.	$x^3 - x^2 + 1$
41.	$\int (3x^2 - 2x + 1) dx = \text{_____} + c$			
	A.	$3x^3 - 2x^2 + x$	B.	$x^3 - x^2 + x$
	C.	$3x^3 - 2x^2 + 1$	D.	$x^3 - x^2 + 1$
42.	$\int e^x [f(x) + f'(x)] dx = \text{_____} + c$			
	A.	$e^x f(x)$	B.	$e^x f'(x)$
	C.	$f(x)$	D.	$f'(x)$
42.	$\int e^x [f(x) + f'(x)] dx = \text{_____} + c$			
	A.	$e^x f(x)$	B.	$e^x f'(x)$
	C.	$f(x)$	D.	$f'(x)$
43.	$\int 2 \sin x \cos x dx = \text{_____} + c$			
	A.	$\sin 2x$	B.	$\cos 2x$
	C.	$\cos^2 x$	D.	$\sin^2 x$
43.	$\int 2 \sin x \cos x dx = \text{_____} + c$			
	A.	$\sin 2x$	B.	$\cos 2x$
	C.	$\cos^2 x$	D.	$\sin^2 x$
44.	$\int \frac{2x}{x^2 + 3} dx = \text{_____} + c$			
	A.	$x^2 + 3$	B.	$\log(2x)$
	C.	$\log(x^2 + 3)$	D.	$\log(x^2)$
44.	$\int \frac{2x}{x^2 + 3} dx = \text{_____} + c$			
	A.	$x^2 + 3$	B.	$\log(2x)$
	C.	$\log(x^2 + 3)$	D.	$\log(x^2)$

45.	$\int_1^2 x^2 dx = \underline{\hspace{2cm}}$		
	A.	$\frac{1}{3}$	B. 3
	C.	$\frac{8}{3}$	D. $\frac{7}{3}$
੪੫.	$\int_1^2 x^2 dx = \underline{\hspace{2cm}}$		
	A.	$\frac{1}{3}$	B. 3
	C.	$\frac{8}{3}$	D. $\frac{7}{3}$
46.	$\int_{-\pi}^{\pi} \sin x dx = \underline{\hspace{2cm}}$		
	A.	0	B. 1
	C.	π	D. $-\pi$
੪੬.	$\int_{-\pi}^{\pi} \sin x dx = \underline{\hspace{2cm}}$		
	A.	0	B. 1
	C.	π	D. $-\pi$
47.	Order of $x^7 \frac{d^2 y}{dx^2} + \frac{d^3 y}{dx^3} + 2 \sin^{-1} x = 0$ is ____.		
	A.	0	B. 1
	C.	2	D. 3
੪੭.	$x^7 \frac{d^2 y}{dx^2} + \frac{d^3 y}{dx^3} + 2 \sin^{-1} x = 0$ ਆਲਿ ਝਲਲ ____.		
	A.	0	B. 1
	C.	2	D. 3
48.	Degree of $\frac{d^2 y}{dx^2} + \left(\frac{dy}{dx}\right)^4 + 2 = 0$ is ____.		
	A.	1	B. 2
	C.	3	D. 4
੪੮.	$\frac{d^2 y}{dx^2} + \left(\frac{dy}{dx}\right)^4 + 2 = 0$ ਚੁੰ ਪਰਿਮਾਪਲ ____.		
	A.	1	B. 2
	C.	3	D. 4
49.	Order of $x + \frac{dy}{dx} = \sqrt{1 + \left(\frac{dy}{dx}\right)^2}$ is ____.		
	A.	1	B. 2
	C.	3	D. 4
੪੯.	$x + \frac{dy}{dx} = \sqrt{1 + \left(\frac{dy}{dx}\right)^2}$ ਆਲਿ ਝਲਲ ____.		
	A.	1	B. 2
	C.	3	D. 4
50.	Degree of $\left(\frac{dy}{dx}\right)^3 + \left(\frac{d^2 y}{dx^2}\right)^4 + \sin\left[\frac{dy}{dx}\right] = 0$ is ____.		

	A.	2	B.	3
	C.	4	D.	Not Defined
૫૦.	$\left(\frac{dy}{dx}\right)^3 + \left(\frac{d^2y}{dx^2}\right)^4 + \sin\left[\frac{dy}{dx}\right] = 0$ નું પરિમાણ _____.			
	A.	2	B.	3
	C.	4	D.	અવ્યાખ્યાયિત
51.	Which of the following is not a differential equation?			
	A.	$3x - \frac{dy}{dx} = 0$	B.	$e^x + e^y = \frac{dy}{dx}$
	C.	$y = \sin\left[\frac{dy}{dx}\right]$	D.	$x \sin y - y \cos x = 0$
૫૧.	નીચેનામાંથી કયું વિકલ સમીકરણ નથી?			
	A.	$3x - \frac{dy}{dx} = 0$	B.	$e^x + e^y = \frac{dy}{dx}$
	C.	$y = \sin\left[\frac{dy}{dx}\right]$	D.	$x \sin y - y \cos x = 0$
52.	The solution of $\frac{dy}{dx} - y = 0$ is _____.			
	A.	e^x	B.	e^y
	C.	y	D.	x
૫૨.	$\frac{dy}{dx} - y = 0$ નો ઉકેલ ____ થાય.			
	A.	e^x	B.	e^y
	C.	y	D.	x
53.	$y = \sin x$ is a solution of which differential equation?			
	A.	$\frac{dy}{dx} - \sin x = 0$	B.	$\frac{dy}{dx} - \cos x = 0$
	C.	$\frac{dy}{dx} + \sin x = 0$	D.	$\frac{dy}{dx} + \cos x = 0$
૫૩.	નીચેનામાંથી કયા વિકલ સમીકરણ નો ઉકેલ $y = \sin x$ થાય?			
	A.	$\frac{dy}{dx} - \sin x = 0$	B.	$\frac{dy}{dx} - \cos x = 0$
	C.	$\frac{dy}{dx} + \sin x = 0$	D.	$\frac{dy}{dx} + \cos x = 0$
54.	Which of the following is a linear differential equation?			
	A.	$\frac{dy}{dx} + \sin x = y^3$	B.	$\frac{dy}{dx} + x = y^3$
	C.	$\frac{dy}{dx} + y = x^3$	D.	$\frac{dx}{dy} + y = x^3$
૫૪.	નીચેનામાંથી કયું વિકલ સમીકરણ સુરેખ વિકલ સમીકરણ છે?			
	A.	$\frac{dy}{dx} + \sin x = y^3$	B.	$\frac{dy}{dx} + x = y^3$
	C.	$\frac{dy}{dx} + y = x^3$	D.	$\frac{dx}{dy} + y = x^3$
55.	Which of the following is not a linear differential equation?			
	A.	$\frac{dx}{dy} + x = y^2$	B.	$\frac{dy}{dx} + x^3 = 3y$

	C.	$\frac{dy}{dx} + y \sin x = \cos x$	D.	$\frac{dy}{dx} + y^2 = x$
૫૫.	નીચેનામાંથી કયું વિકલ સમીકરણ સુરેખ વિકલ સમીકરણ નથી?			
	A.	$\frac{dx}{dy} + x = y^2$	B.	$\frac{dy}{dx} + x^3 = 3y$
	C.	$\frac{dy}{dx} + y \sin x = \cos x$	D.	$\frac{dy}{dx} + y^2 = x$
56.	Integrating factor of $\frac{dy}{dx} + \frac{y}{x} = x^3$ is ____.			
	A.	x	B.	y
	C.	$\log x$	D.	$\log y$
૫૬.	$\frac{dy}{dx} + \frac{y}{x} = x^3$ નું સંકલ્પકારક અવયવ ____ થાય.			
	A.	x	B.	y
	C.	$\log x$	D.	$\log y$
57.	Integrating factor of $\frac{dy}{dx} + x^3 = 3y$ is ____.			
	A.	e^x	B.	e^{-x}
	C.	e^{3x}	D.	e^{-3x}
૫૭.	$\frac{dy}{dx} + x^3 = 3y$ નું સંકલ્પકારક અવયવ ____ થાય.			
	A.	e^x	B.	e^{-x}
	C.	e^{3x}	D.	e^{-3x}
58.	Integrating factor of $\frac{dx}{dy} + x = y^2$ is ____.			
	A.	$-e^x$	B.	$-e^y$
	C.	e^x	D.	e^y
૫૮.	$\frac{dx}{dy} + x = y^2$ નું સંકલ્પકારક અવયવ ____ થાય.			
	A.	$-e^x$	B.	$-e^y$
	C.	e^x	D.	e^y
59.	If $z = 2i - 5$ then $\text{Im}(z) =$ ____			
	A.	-5	B.	5
	C.	-2	D.	2
૫૯.	જો $z = 2i - 5$ હોય તો $\text{Im}(z) =$ ____			
	A.	-5	B.	5
	C.	-2	D.	2
60.	If $z = -3i$ then $\text{Re}(z) =$ ____			
	A.	-3	B.	3
	C.	1	D.	0
૬૦.	જો $z = -3i$ હોય તો $\text{Re}(z) =$ ____			
	A.	-3	B.	3
	C.	1	D.	0
61.	$i^{2024} =$ ____			
	A.	1	B.	i
	C.	$-i$	D.	-1
૬૧.	$i^{2024} =$ ____			
	A.	1	B.	i

	C.	$-i$	D.	-1
62.	If $z = 3 - i$ then $ z = \underline{\hspace{1cm}}$			
	A.	5	B.	2
	C.	$\sqrt{8}$	D.	$\sqrt{10}$
૬૨.	જો $z = 3 - i$ હોય તો $ z = \underline{\hspace{1cm}}$.			
	A.	5	B.	2
	C.	$\sqrt{8}$	D.	$\sqrt{10}$
63.	If $z = 5 - 7i$ then $\bar{Z} = \underline{\hspace{1cm}}$.			
	A.	$7 - 5i$	B.	$5 + 7i$
	C.	$7 + 5i$	D.	$-2i$
૬૩.	જો $z = 5 - 7i$ હોય તો $\bar{Z} = \underline{\hspace{1cm}}$.			
	A.	$7 - 5i$	B.	$5 + 7i$
	C.	$7 + 5i$	D.	$-2i$
64.	$Z\bar{Z} = \underline{\hspace{1cm}}$.			
	A.	Z^2	B.	$\bar{Z}^2$
	C.	$ Z $	D.	$ Z ^2$
૬૪.	$Z\bar{Z} = \underline{\hspace{1cm}}$.			
	A.	Z^2	B.	$\bar{Z}^2$
	C.	$ Z $	D.	$ Z ^2$
65.	If $z_1 = 3 + 5i$ and $z_2 = 4 - 2i$ then $z_1 + z_2 = \underline{\hspace{1cm}}$.			
	A.	$7 + 3i$	B.	$7 - 3i$
	C.	$-7 + 3i$	D.	$-7 - 3i$
૬૫.	જો $z_1 = 3 + 5i$ અને $z_2 = 4 - 2i$ હોય તો $z_1 + z_2 = \underline{\hspace{1cm}}$.			
	A.	$7 + 3i$	B.	$7 - 3i$
	C.	$-7 + 3i$	D.	$-7 - 3i$
66.	$(3 + i)(2 + 4i) = \underline{\hspace{1cm}}$.			
	A.	$6 + 4i$	B.	$2 + 14i$
	C.	$6 - 4i$	D.	$2 - 14i$
૬૬.	$(3 + i)(2 + 4i) = \underline{\hspace{1cm}}$.			
	A.	$6 + 4i$	B.	$2 + 14i$
	C.	$6 - 4i$	D.	$2 - 14i$
67.	$Z + \bar{Z} = \underline{\hspace{1cm}}$.			
	A.	$\text{Re}(Z)$	B.	$2\text{Re}(Z)$
	C.	$\text{Im}(Z)$	D.	$2\text{Im}(Z)$
૬૭.	$Z + \bar{Z} = \underline{\hspace{1cm}}$.			
	A.	$\text{Re}(Z)$	B.	$2\text{Re}(Z)$
	C.	$\text{Im}(Z)$	D.	$2\text{Im}(Z)$
68.	$(1 + i)^2 = \underline{\hspace{1cm}}$.			
	A.	$2 + 2i$	B.	$2 - 2i$
	C.	$2i$	D.	$-2i$
૬૮.	$(1 + i)^2 = \underline{\hspace{1cm}}$.			
	A.	$2 + 2i$	B.	$2 - 2i$
	C.	$2i$	D.	$-2i$
69.	$\text{Arg}(i) = \underline{\hspace{1cm}}$.			

	A.	$\frac{\pi}{2}$	B.	π
	C.	0	D.	1
56.	$Arg(i) = \underline{\hspace{1cm}}$.			
	A.	$\frac{\pi}{2}$	B.	π
	C.	0	D.	1
70.	$(\cos 2\theta - i \sin 2\theta)^3 = \underline{\hspace{1cm}}$.			
	A.	$\cos 5\theta - i \sin 5\theta$	B.	$\cos 5\theta + i \sin 5\theta$
	C.	$\cos 6\theta - i \sin 6\theta$	D.	$\cos 6\theta + i \sin 6\theta$
90.	$(\cos 2\theta - i \sin 2\theta)^3 = \underline{\hspace{1cm}}$.			
	A.	$\cos 5\theta - i \sin 5\theta$	B.	$\cos 5\theta + i \sin 5\theta$
	C.	$\cos 6\theta - i \sin 6\theta$	D.	$\cos 6\theta + i \sin 6\theta$
