Seat No.: _____ Enrolment No._____

GUJARAT TECHNOLOGICAL UNIVERSITY

Diploma Engineering – SEMESTER – 1(CtoD) EXAMINATION – Summer-2023

Subject Code: C300001 **Date: 02-08-2023**

Subject Name: BASIC 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 and 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.	$\log_3 27 =$ _____			
	A.	-3	B.	3
	C.	$\frac{1}{3}$	D.	$-\frac{1}{3}$
૧.	$\log_3 27 =$ _____			
	A.	-3	B.	3
	C.	$\frac{1}{3}$	D.	$-\frac{1}{3}$
2.	$\log 1 + \log 2 + \log 3 =$ _____			
	A.	$\log 5$	B.	$\log 7$
	C.	$\log 6$	D.	0
૨.	$\log 1 + \log 2 + \log 3 =$ _____			
	A.	$\log 5$	B.	$\log 7$
	C.	$\log 6$	D.	0
3.	$3\log 2 - 2\log 3 =$ _____			
	A.	$\log\frac{8}{9}$	B.	$\log\frac{3}{2}$
	C.	$\log\frac{2}{3}$	D.	$\log\frac{9}{8}$
૩.	$3\log 2 - 2\log 3 =$ _____			
	A.	$\log\frac{8}{9}$	B.	$\log\frac{3}{2}$
	C.	$\log\frac{2}{3}$	D.	$\log\frac{9}{8}$
4.	$\log_{10} 0.01 =$ ___			
	A.	2	B.	10
	C.	100	D.	-2
૪.	$\log_{10} 0.01 =$ ___			
	A.	2	B.	10
	C.	100	D.	-2
5.	$\log 81 \div \log 3 =$ __			

	A.	4	B.	-4
	C.	27	D.	-27
૫.	$\log 81 \div \log 3 =$ __			
	A.	4	B.	-4
	C.	27	D.	-27
6.	$If\ \log_x 25 = 2\ then\ x =$ __			
	A.	50	B.	12.5
	C.	5	D.	0
૬.	જો $\log_x 25 = 2$ તો $x =$ __			
	A.	50	B.	12.5
	C.	5	D.	0
7.	$\log 10 =$ ___			
	A.	0	B.	-1
	C.	10	D.	1
૭.	$\log 10 =$ ___			
	A.	0	B.	-1
	C.	10	D.	1
8.	$\log 4 * \log 3 * \log 2 * \log 1 =$ _____			
	A.	1	B.	24
	C.	0	D.	9
૮.	$\log 4 * \log 3 * \log 2 * \log 1 =$ _____			
	A.	1	B.	24
	C.	0	D.	9
9.	$5^{\log_5 125} =$ ____			
	A.	5	B.	125
	C.	25	D.	1
૯.	$5^{\log_5 125} =$ ____			
	A.	5	B.	125
	C.	25	D.	1
10.	$\log_7 343 =$ ___			
	A.	7	B.	49
	C.	5	D.	3
૧૦.	$\log_7 343 =$ ___			
	A.	7	B.	49
	C.	5	D.	3
11.	$\begin{vmatrix} 1 & -2 \\ 0 & 2 \end{vmatrix} =$ ___			
	A.	2	B.	0
	C.	-2	D.	-1
૧૧.	$\begin{vmatrix} 1 & -2 \\ 0 & 2 \end{vmatrix} =$ ___			
	A.	2	B.	0
	C.	-2	D.	-1
12.	$If\ \begin{vmatrix} 3 & 1 \\ x & 2 \end{vmatrix} = 5\ then\ x =$ ___			
	A.	0	B.	1
	C.	5	D.	-3
૧૨.	જો $\begin{vmatrix} 3 & 1 \\ x & 2 \end{vmatrix} = 5$ તો $x =$ ___			
	A.	0	B.	1

	C.	5	D.	-3
13.	$\begin{vmatrix} 1 & -2 & 3 \\ 2 & 0 & -2 \\ -1 & 2 & -3 \end{vmatrix} = \_\_$			
	A.	-23	B.	-5
	C.	0	D.	-17
૧૩.	$\begin{vmatrix} 1 & -2 & 3 \\ 2 & 0 & -2 \\ -1 & 2 & -3 \end{vmatrix} = \_\_$			
	A.	-23	B.	-5
	C.	0	D.	-17
14.	$The\ order\ of\ matrix\ A = \begin{bmatrix} -1 \\ 1 \end{bmatrix}\ is = \_\_\_$			
	A.	1×1	B.	2×2
	C.	1×2	D.	2×1
૧૪.	શ્રેણિક $A = \begin{bmatrix} -1 \\ 1 \end{bmatrix}$ નો ક્રમાંક $= \_\_\_$			
	A.	1×1	B.	2×2
	C.	1×2	D.	2×1
15.	$(A')' = \_\_$			
	A.	A	B.	A^{-1}
	C.	A^2	D.	A'
૧૫.	$(A')' = \_\_$			
	A.	A	B.	A^{-1}
	C.	A^2	D.	A'
16.	$If\ A = \begin{bmatrix} 1 & 0 \\ 0 & 1 \end{bmatrix}\ then\ A^2 = \_\_\_$			
	A.	$\begin{bmatrix} 0 & 0 \\ 0 & 1 \end{bmatrix}$	B.	$\begin{bmatrix} 1 & 1 \\ 1 & 1 \end{bmatrix}$
	C.	$\begin{bmatrix} 1 & 0 \\ 0 & 1 \end{bmatrix}$	D.	$\begin{bmatrix} 2 & 0 \\ 0 & 2 \end{bmatrix}$
૧૬.	જો $A = \begin{bmatrix} 1 & 0 \\ 0 & 1 \end{bmatrix}$ તો $A^2 = \_\_\_$			
	A.	$\begin{bmatrix} 0 & 0 \\ 0 & 1 \end{bmatrix}$	B.	$\begin{bmatrix} 1 & 1 \\ 1 & 1 \end{bmatrix}$
	C.	$\begin{bmatrix} 1 & 0 \\ 0 & 1 \end{bmatrix}$	D.	$\begin{bmatrix} 2 & 0 \\ 0 & 2 \end{bmatrix}$
17.	$If\ A = \begin{bmatrix} 1 & 2 & -1 \\ 0 & 1 & 0 \end{bmatrix}\ and\ B = \begin{bmatrix} 0 & -1 & 2 \\ 1 & 0 & 1 \end{bmatrix}\ then\ A + B = \_\_\_$			
	A.	$\begin{bmatrix} 1 & -3 & -3 \\ 1 & 1 & 1 \end{bmatrix}$	B.	$\begin{bmatrix} 1 & 1 & 1 \\ 1 & 1 & 1 \end{bmatrix}$
	C.	$\begin{bmatrix} 0 & 3 & 1 \\ 1 & 1 & 1 \end{bmatrix}$	D.	Not possible
૧૭.	જો $A = \begin{bmatrix} 1 & 2 & -1 \\ 0 & 1 & 0 \end{bmatrix}$ અને $B = \begin{bmatrix} 0 & -1 & 2 \\ 1 & 0 & 1 \end{bmatrix}$ તો $A + B = \_\_\_$			
	A.	$\begin{bmatrix} 1 & -3 & -3 \\ 1 & 1 & 1 \end{bmatrix}$	B.	$\begin{bmatrix} 1 & 1 & 1 \\ 1 & 1 & 1 \end{bmatrix}$
	C.	$\begin{bmatrix} 0 & 3 & 1 \\ 1 & 1 & 1 \end{bmatrix}$	D.	Not possible
18.	$If\ A = [1 \quad 2]\ and\ B = \begin{bmatrix} 2 \\ 1 \end{bmatrix}\ then\ AB = \_\_\_$			

	A.	$[2 \quad 2]$	B.	$\begin{bmatrix}2\\2\end{bmatrix}$
	C.	$\begin{bmatrix}1 & 2\\2 & 1\end{bmatrix}$	D.	[4]
૧૮.	જો $A = [1 \quad 2]$ અને $B = \begin{bmatrix}2\\1\end{bmatrix}$ તો $AB =$ ___			
	A.	$[2 \quad 2]$	B.	$\begin{bmatrix}2\\2\end{bmatrix}$
	C.	$\begin{bmatrix}1 & 2\\2 & 1\end{bmatrix}$	D.	[4]
19.	$If \begin{bmatrix}2 & 3-x\\5 & -4\end{bmatrix} = \begin{bmatrix}2 & 5\\5 & 2x\end{bmatrix} then\ x =$ ___			
	A.	2	B.	8
	C.	-2	D.	-8
૧૯.	જો $\begin{bmatrix}2 & 3-x\\5 & -4\end{bmatrix} = \begin{bmatrix}2 & 5\\5 & 2x\end{bmatrix}$ તો $x =$ ___			
	A.	2	B.	8
	C.	-2	D.	-8
20.	$The\ order\ of\ matrix\ A = \begin{bmatrix}2 & 0\\-1 & 10\\5 & -2\end{bmatrix} is =$ ___			
	A.	2×3	B.	3×2
	C.	2×2	D.	3×3
૨૦.	શ્રેણિક $A = \begin{bmatrix}2 & 0\\-1 & 10\\5 & -2\end{bmatrix}$ નો ક્રમાંક = ___			
	A.	2×3	B.	3×2
	C.	2×2	D.	3×3
21.	$If\ A = \begin{bmatrix}1 & -2\\-8 & -4\end{bmatrix} then\ cofactor\ of\ (-2)\ is =$ ___			
	A.	8	B.	4
	C.	2	D.	-1
૨૧.	જો $A = \begin{bmatrix}1 & -2\\-8 & -4\end{bmatrix}$ તો (-2) નો સહ અવયવ = ___			
	A.	8	B.	4
	C.	2	D.	-1
22.	$If\ A = \begin{bmatrix}0 & 1\\-2 & 0\end{bmatrix} then\ Adj\ (A) =$ ___			
	A.	$\begin{bmatrix}0 & 1\\-2 & 0\end{bmatrix}$	B.	$\begin{bmatrix}0 & -1\\2 & 0\end{bmatrix}$
	C.	$\begin{bmatrix}1 & 0\\0 & -2\end{bmatrix}$	D.	$\begin{bmatrix}-1 & 0\\0 & 2\end{bmatrix}$
૨૨.	જો $A = \begin{bmatrix}0 & 1\\-2 & 0\end{bmatrix}$ તો $Adj\ (A) =$ ___			
	A.	$\begin{bmatrix}0 & 1\\-2 & 0\end{bmatrix}$	B.	$\begin{bmatrix}0 & -1\\2 & 0\end{bmatrix}$
	C.	$\begin{bmatrix}1 & 0\\0 & -2\end{bmatrix}$	D.	$\begin{bmatrix}-1 & 0\\0 & 2\end{bmatrix}$
23.	$\begin{vmatrix}3 & 0 & 0\\0 & 3 & 0\\0 & 0 & 3\end{vmatrix} =$ ___			
	A.	0	B.	3
	C.	9	D.	27

૨૩.	$\begin{vmatrix} 3 & 0 & 0 \\ 0 & 3 & 0 \\ 0 & 0 & 3 \end{vmatrix} =$ ___			
	A.	0	B.	3
	C.	9	D.	27
24.	*If A is a singular matrix then*			
	A.	$\lvert A\rvert \neq 0$	B.	$A' = A$
	C.	$\lvert A\rvert = 0$	D.	$A' = -A$
૨૪.	જો શ્રેણિક A અસામાન્ય શ્રેણિક હોય તો			
	A.	$\lvert A\rvert \neq 0$	B.	$A' = A$
	C.	$\lvert A\rvert = 0$	D.	$A' = -A$
25.	*If* $A = \begin{bmatrix} 3 & 1 \\ 5 & 2 \end{bmatrix}$ *then* $A^{-1} =$ ___			
	A.	$\begin{bmatrix} 2 & -1 \\ -5 & 3 \end{bmatrix}$	B.	$\begin{bmatrix} 3 & 5 \\ 1 & 2 \end{bmatrix}$
	C.	$\begin{bmatrix} -3 & 1 \\ 5 & -2 \end{bmatrix}$	D.	$\begin{bmatrix} 3 & -1 \\ -5 & 2 \end{bmatrix}$
૨૫.	જો $A = \begin{bmatrix} 3 & 1 \\ 5 & 2 \end{bmatrix}$ તો $A^{-1} =$ ___			
	A.	$\begin{bmatrix} 2 & -1 \\ -5 & 3 \end{bmatrix}$	B.	$\begin{bmatrix} 3 & 5 \\ 1 & 2 \end{bmatrix}$
	C.	$\begin{bmatrix} -3 & 1 \\ 5 & -2 \end{bmatrix}$	D.	$\begin{bmatrix} 3 & -1 \\ -5 & 2 \end{bmatrix}$
26.	$AA^{-1} =$ ___			
	A.	A^{-1}	B.	I
	C.	A	D.	Not possible
૨૬.	$AA^{-1} =$ ___			
	A.	A^{-1}	B.	I
	C.	A	D.	Not possible
27.	*If* $A = \begin{bmatrix} 0 & 2 \\ 5 & 1 \end{bmatrix}$ *then cofactor of* (A) *is* $=$ ___			
	A.	$\begin{bmatrix} 1 & -5 \\ -2 & 0 \end{bmatrix}$	B.	$\begin{bmatrix} 0 & -2 \\ 5 & 1 \end{bmatrix}$
	C.	$\begin{bmatrix} 0 & 2 \\ 5 & -1 \end{bmatrix}$	D.	$\begin{bmatrix} 0 & -2 \\ -5 & -1 \end{bmatrix}$
૨૭.	જો $A = \begin{bmatrix} 0 & 2 \\ 5 & 1 \end{bmatrix}$ તો A નો સહ અવયવ શ્રેણિક $=$ ___			
	A.	$\begin{bmatrix} 1 & -5 \\ -2 & 0 \end{bmatrix}$	B.	$\begin{bmatrix} 0 & -2 \\ 5 & 1 \end{bmatrix}$
	C.	$\begin{bmatrix} 0 & 2 \\ 5 & -1 \end{bmatrix}$	D.	$\begin{bmatrix} 0 & -2 \\ -5 & -1 \end{bmatrix}$
28.	*If* $A = \begin{bmatrix} 1 & -2 \\ 3 & 0 \\ 2 & -4 \end{bmatrix}$ *and* $B = \begin{bmatrix} -4 & 0 \\ -1 & 1 \\ 2 & 3 \end{bmatrix}$ *then* $2A - B =$ ___			
	A.	$\begin{bmatrix} 6 & -2 \\ 3 & -1 \\ 2 & 5 \end{bmatrix}$	B.	$\begin{bmatrix} 6 & -4 \\ 7 & -1 \\ 2 & -11 \end{bmatrix}$
	C.	$\begin{bmatrix} 6 & -2 \\ 7 & 0 \\ 2 & -4 \end{bmatrix}$	D.	$\begin{bmatrix} 1 & -2 \\ 7 & -1 \\ 2 & -4 \end{bmatrix}$

૨૮.	જો $A=\begin{bmatrix}1 & -2\\ 3 & 0\\ 2 & -4\end{bmatrix}$ અને $B=\begin{bmatrix}-4 & 0\\ -1 & 1\\ 2 & 3\end{bmatrix}$ તો $2A-B=$ ___			
	A.	$\begin{bmatrix}6 & -2\\ 3 & -1\\ 2 & 5\end{bmatrix}$	B.	$\begin{bmatrix}6 & -4\\ 7 & -1\\ 2 & -11\end{bmatrix}$
	C.	$\begin{bmatrix}6 & -2\\ 7 & 0\\ 2 & -4\end{bmatrix}$	D.	$\begin{bmatrix}1 & -2\\ 7 & -1\\ 2 & -4\end{bmatrix}$
29.	$\frac{5\pi}{6}=$ ____$degree$			
	A.	$216^{\cdot}$	B.	$180^{\cdot}$
	C.	$150^{\cdot}$	D.	$270^{\cdot}$
૨૯.	$\frac{5\pi}{6}=$ ____$degree$			
	A.	$216^{\cdot}$	B.	$180^{\cdot}$
	C.	$150^{\cdot}$	D.	$270^{\cdot}$
30.	$135^{\cdot}=$ ____$radian$			
	A.	$\frac{6\pi}{5}$	B.	$\frac{3\pi}{5}$
	C.	$\frac{5\pi}{3}$	D.	$\frac{3\pi}{4}$
૩૦.	$135^{\cdot}=$ ____$radian$			
	A.	$\frac{6\pi}{5}$	B.	$\frac{3\pi}{5}$
	C.	$\frac{5\pi}{3}$	D.	$\frac{3\pi}{4}$
31.	$\sin^{-1}\left(\frac{\sqrt{3}}{2}\right)=$ ____			
	A.	$\frac{\pi}{2}$	B.	$\frac{\pi}{3}$
	C.	$\frac{\pi}{4}$	D.	$\frac{\pi}{6}$
૩૧.	$\sin^{-1}\left(\frac{\sqrt{3}}{2}\right)=$ ____			
	A.	$\frac{\pi}{2}$	B.	$\frac{\pi}{3}$
	C.	$\frac{\pi}{4}$	D.	$\frac{\pi}{6}$
32.	$\cos\frac{2\pi}{3}=$ _____			
	A.	$-\frac{1}{2}$	B.	$-\frac{1}{\sqrt{2}}$
	C.	$-\frac{\sqrt{3}}{2}$	D.	-1
૩૨.	$\cos\frac{2\pi}{3}=$ _____			
	A.	$-\frac{1}{2}$	B.	$-\frac{1}{\sqrt{2}}$

	C.	$-\frac{\sqrt{3}}{2}$	D.	-1
33.	$\sin(A+B) =$ _____			
	A.	$\sin A \sin B + \cos A \cos B$	B.	$\sin A \cos B - \cos A \sin B$
	C.	$\sin A \sin B - \cos A \cos B$	D.	$\sin A \cos B + \cos A \sin B$
૩૩.	$\sin(A+B) =$ _____			
	A.	$\sin A \sin B + \cos A \cos B$	B.	$\sin A \cos B - \cos A \sin B$
	C.	$\sin A \sin B - \cos A \cos B$	D.	$\sin A \cos B + \cos A \sin B$
34.	$Period\ of\ \cos(3x-5) is =$ _____			
	A.	$\frac{3\pi}{2}$	B.	$\frac{5\pi}{3}$
	C.	$\frac{2\pi}{3}$	D.	$\frac{5\pi}{6}$
૩૪.	$\cos(3x-5)$ નું આવર્તમાન = _____			
	A.	$\frac{3\pi}{2}$	B.	$\frac{5\pi}{3}$
	C.	$\frac{2\pi}{3}$	D.	$\frac{5\pi}{6}$
35.	$\sin^2 16^\circ + \cos^2 16^\circ =$ _____			
	A.	1	B.	0
	C.	-1	D.	180
૩૫.	$\sin^2 16^\circ + \cos^2 16^\circ =$ _____			
	A.	1	B.	0
	C.	-1	D.	180
36.	$\sec^2\theta^\circ - 1 =$ _____			
	A.	$\sin^2\theta^\circ$	B.	$\cos^2\theta^\circ$
	C.	$\text{cosec}^2\theta^\circ$	D.	$\tan^2\theta^\circ$
૩૬.	$\sec^2\theta^\circ - 1 =$ _____			
	A.	$\sin^2\theta^\circ$	B.	$\cos^2\theta^\circ$
	C.	$\text{cosec}^2\theta^\circ$	D.	$\tan^2\theta^\circ$
37.	$\tan 225^\circ =$ _____			
	A.	1	B.	0
	C.	-1	D.	$\frac{1}{\sqrt{3}}$
૩૭.	$\tan 225^\circ =$ _____			
	A.	1	B.	0
	C.	-1	D.	$\frac{1}{\sqrt{3}}$
38.	$\cos 30^\circ * \cos 45^\circ * \cos 60^\circ * \cos 90^\circ =$ _____			
	A.	$\frac{\sqrt{3}}{2\sqrt{2}}$	B.	0
	C.	1	D.	$\frac{3}{2}$
૩૮.	$\cos 30^\circ * \cos 45^\circ * \cos 60^\circ * \cos 90^\circ =$ _____			
	A.	$\frac{\sqrt{3}}{2\sqrt{2}}$	B.	1

	C.	0	D.	$\frac{3}{2}$
39.	$\sin 2\alpha =$ _____			
	A.	$\sin^2\alpha - \cos^2\alpha$	B.	$1 - \cos^2\alpha$
	C.	$2\sin\alpha\cos\alpha$	D.	$\sin^2\alpha - 1$
૩૯.	$\sin 2\alpha =$ _____			
	A.	$\sin^2\alpha - \cos^2\alpha$	B.	$1 - \cos^2\alpha$
	C.	$2\sin\alpha\cos\alpha$	D.	$\sin^2\alpha - 1$
40.	$\sin\left(\frac{5\pi}{2} - \theta\right) =$ ___			
	A.	$\operatorname{cosec}\theta$	B.	$\cos\theta$
	C.	$\sin\theta$	D.	$\sec\theta$
૪૦.	$\sin\left(\frac{5\pi}{2} - \theta\right) =$ ___			
	A.	$\operatorname{cosec}\theta$	B.	$\cos\theta$
	C.	$\sin\theta$	D.	$\sec\theta$
41.	$\tan(\pi + \theta) =$ _____			
	A.	$\operatorname{cosec}\theta$	B.	$\cot\theta$
	C.	$\tan\theta$	D.	$\sec\theta$
૪૧.	$\tan(\pi + \theta) =$ _____			
	A.	$\operatorname{cosec}\theta$	B.	$\cot\theta$
	C.	$\tan\theta$	D.	$\sec\theta$
42.	$Period\ of\ \tan(5x - 7)\ is =$ _____			
	A.	$\frac{\pi}{7}$	B.	$\frac{2\pi}{5}$
	C.	$\frac{2\pi}{7}$	D.	$\frac{\pi}{5}$
૪૨.	$\tan(5x - 7)$ નું આવર્તમાન = _____			
	A.	$\frac{\pi}{7}$	B.	$\frac{2\pi}{5}$
	C.	$\frac{2\pi}{7}$	D.	$\frac{\pi}{5}$
43.	$\tan^{-1}\left(\tan\frac{\pi}{3}\right) =$ _____			
	A.	$\frac{\pi}{3}$	B.	$\frac{\pi}{2}$
	C.	$\frac{2\pi}{3}$	D.	$\frac{\pi}{4}$
૪૩.	$\tan^{-1}\left(\tan\frac{\pi}{3}\right) =$ _____			
	A.	$\frac{\pi}{3}$	B.	$\frac{\pi}{3}$
	C.	$\frac{2\pi}{3}$	D.	$\frac{2\pi}{3}$
44.	$\cos\ 2\alpha =$ _____			
	A.	$\sin^2\alpha - \cos^2\alpha$	B.	$1 - \cos^2\alpha$
	C.	$2\sin\alpha\cos\alpha$	D.	$2\sin^2\alpha - 1$
૪૪.	$\cos 2\alpha =$ _____			
	A.	$\sin^2\alpha + \cos^2\alpha$	B.	$1 + 2\cos^2\alpha$
	C.	$2\sin\alpha - \cos\alpha$	D.	$2\sin^2\alpha - 1$

45.	$\sec^{-1}(x) + \operatorname{cosec}^{-1}(x) =$ _____			
	A.	$\frac{\pi}{4}$	B.	$\frac{\pi}{2}$
	C.	π	D.	$\frac{3\pi}{2}$
૪૫.	$\sec^{-1}(x) + \operatorname{cosec}^{-1}(x) =$ _____			
	A.	$\frac{\pi}{4}$	B.	$\frac{\pi}{2}$
	C.	π	D.	$\frac{3\pi}{2}$
46.	$i \cdot j =$ _____			
	A.	k	B.	j
	C.	0	D.	i
૪૬.	$i \cdot j =$ _____			
	A.	k	B.	j
	C.	0	D.	i
47.	$\bar{a} = (2,-1,-1) then \lvert\bar{a}\rvert =$ ___			
	A.	$\sqrt{1}$	B.	$\sqrt{3}$
	C.	$\sqrt{5}$	D.	$\sqrt{6}$
૪૭.	$\bar{a} = (2,-1,-1)$ તો $\lvert\bar{a}\rvert =$ ___			
	A.	$\sqrt{1}$	B.	$\sqrt{3}$
	C.	$\sqrt{5}$	D.	$\sqrt{6}$
48.	$\bar{a} = (1,-1,0) and \bar{b} = (-1,1,2) then \bar{a} - \bar{b} =$ ___			
	A.	(2,0,2)	B.	(0,0,2)
	C.	$(2,-2,-2)$	D.	$(0,-2,2)$
૪૮.	$\bar{a} = (1,-1,0)$ અને $\bar{b} = (-1,1,2)$ તો $\bar{a} - \bar{b} =$ ___			
	A.	(2,0,2)	B.	(0,0,2)
	C.	$(2,-2,-2)$	D.	$(0,-2,2)$
49.	$If \bar{l} + \bar{m} = \bar{l} + \bar{n} then \bar{m} =$ _____			
	A.	$\bar{l}$	B.	$\bar{m}$
	C.	$\bar{n}$	D.	$\bar{n} - \bar{l}$
૪૯.	જો $\bar{l} + \bar{m} = \bar{l} + \bar{n}$ તો $\bar{m} =$ _____			
	A.	$\bar{l}$	B.	$\bar{m}$
	C.	$\bar{n}$	D.	$\bar{n} - \bar{l}$
50.	$\bar{a} = (5,2,6) and \bar{b} = (4,8,-6) then \bar{a} \cdot \bar{b} =$ ___			
	A.	0	B.	19
	C.	36	D.	72
૫૦.	$\bar{a} = (5,2,6)$ અને $\bar{b} = (4,8,-6)$ તો $\bar{a} \cdot \bar{b} =$ ___			
	A.	0	B.	19
	C.	36	D.	72
51.	$If \theta is the angle between \bar{a} and \bar{b} then \cos\theta =$			
	A.	$\frac{\bar{a} \times \bar{b}}{\lvert\bar{a}\rvert\lvert\bar{b}\rvert}$	B.	$\frac{\bar{a} + \bar{b}}{\lvert\bar{a}\rvert\lvert\bar{b}\rvert}$
	C.	$\frac{\bar{a} - \bar{b}}{\lvert\bar{a}\rvert\lvert\bar{b}\rvert}$	D.	$\frac{\bar{a} \cdot \bar{b}}{\lvert\bar{a}\rvert\lvert\bar{b}\rvert}$

૫૧.	જો θ એ $\bar{a}$ અને $\bar{b}$ વચ્ચે નો ખૂણો હોય તો $\cos\theta =$			
	A.	$\frac{\bar{a}\times\bar{b}}{\lvert\bar{a}\rvert\lvert\bar{b}\rvert}$	B.	$\frac{\bar{a}+\bar{b}}{\lvert\bar{a}\rvert\lvert\bar{b}\rvert}$
	C.	$\frac{\bar{a}-\bar{b}}{\lvert\bar{a}\rvert\lvert\bar{b}\rvert}$	D.	$\frac{\bar{a}\cdot\bar{b}}{\lvert\bar{a}\rvert\lvert\bar{b}\rvert}$
52.	$\bar{a}=(0,0,1)\ and\ \bar{b}=(0,1,0)\ then\ \bar{b}\times\bar{a}\ =$ ___			
	A.	$(1,0,0)$	B.	$(0,1,0)$
	C.	$(0,0,1)$	D.	$(1,1,1)$
૫૨.	$\bar{a}=(0,0,1)$ અને $\bar{b}=(0,1,0)$ તો $\bar{b}\times\bar{a}\ =$ ___			
	A.	$(1,0,0)$	B.	$(0,1,0)$
	C.	$(0,0,1)$	D.	$(1,1,1)$
53.	$i\times(j\cdot k)=$ _____			
	A.	i	B.	k
	C.	j	D.	0
૫૩.	$i\times(j\cdot k)=$ _____			
	A.	i	B.	k
	C.	j	D.	0
54.	$i\cdot(j\times k)=$ _____			
	A.	$(1,1,1)$	B.	2
	C.	1	D.	0
૫૪.	$i\cdot(j\times k)=$ _____			
	A.	$(1,1,1)$	B.	2
	C.	1	D.	0
55.	$\bar{a}=(1,2,3)\ and\ \bar{b}=(3,2,1)\ then\ \lvert3\bar{b}-2\bar{a}\rvert\ =$ ___			
	A.	$(-3,-2,3)$	B.	$(7,2,-3)$
	C.	$(-2,-2,-2)$	D.	$(11,11,11)$
૫૫.	$\bar{a}=(1,2,3)$ અને $\bar{b}=(3,2,1)$ તો $\lvert3\bar{b}-2\bar{a}\rvert\ =$ ___			
	A.	$(-3,-2,3)$	B.	$(7,2,-3)$
	C.	$(-2,-2,-2)$	D.	$(11,11,11)$
56.	$If\ \bar{a}\ and\ \bar{b}\ are\ two\ perpendicular\ vectors\ then$_____			
	A.	$\bar{a}\times\bar{b}=0$	B.	$\lvert\bar{a}\times\bar{b}\rvert=0$
	C.	$\bar{a}\cdot\bar{b}=0$	D.	$\bar{a}+\bar{b}=0$
૫૬.	જો $\bar{a}$ અને $\bar{b}$ બન્ને લંબ સદિશ હોય તો _____			
	A.	$\bar{a}\times\bar{b}=0$	B.	$\lvert\bar{a}\times\bar{b}\rvert=0$
	C.	$\bar{a}\cdot\bar{b}=0$	D.	$\bar{a}+\bar{b}=0$
57.	$The\ angle\ between\ \bar{a}=(0,0,1)\ and\ \bar{b}=(0,1,0)\ is=$ ___			
	A.	$30°$	B.	$45°$
	C.	$60°$	D.	$90°$
૫૭.	$\bar{a}=(0,0,1)$ અને $\bar{b}=(0,1,0)$ વચ્ચે નો ખૂણો $=$ ___			
	A.	$30°$	B.	$45°$
	C.	$60°$	D.	$90°$
58.	$If\ \bar{a}=(1,0,1)\ then\ \hat{a}=$ ___			
	A.	$\left(\frac{1}{\sqrt{3}},\frac{0}{\sqrt{3}},\frac{1}{\sqrt{3}}\right)$	B.	$\left(\frac{1}{\sqrt{2}},\frac{0}{\sqrt{2}},\frac{1}{\sqrt{2}}\right)$

	C.	$\left(\frac{1}{3},\frac{0}{3},\frac{1}{3}\right)$	D.	$\left(\frac{1}{2},\frac{0}{2},\frac{1}{2}\right)$
૫૮.	જો $\bar{a}=(1,0,1)$ તો $\hat{a}=$ ___			
	A.	$\left(\frac{1}{\sqrt{3}},\frac{0}{\sqrt{3}},\frac{1}{\sqrt{3}}\right)$	B.	$\left(\frac{1}{\sqrt{2}},\frac{0}{\sqrt{2}},\frac{1}{\sqrt{2}}\right)$
	C.	$\left(\frac{1}{3},\frac{0}{3},\frac{1}{3}\right)$	D.	$\left(\frac{1}{2},\frac{0}{2},\frac{1}{2}\right)$
59.	$\bar{a}=(1,5,2)\ and\ \bar{b}=(-3,-15,-6)\ then\ \bar{a}\times\bar{b}\ =$ ___			
	A.	(0,0,0)	B.	(0,1,90)
	C.	(-3,-75,-12)	D.	(-2,-10,-4)
૫૯.	$\bar{a}=(1,5,2)$ અને $\bar{b}=(-3,-15,-6)$ તો $\bar{a}\times\bar{b}\ =$ ___			
	A.	(0,0,0)	B.	(0,1,90)
	C.	(-3,-75,-12)	D.	(-2,-10,-4)
60.	$\bar{a}=(1,2,-3)\ then\ \bar{a}\cdot\bar{a}\ =$ ___			
	A.	(1,4,9)	B.	$\sqrt{14}$
	C.	$(1,4,-9)$	D.	14
૬૦.	$\bar{a}=(1,2,-3)\ then\ \bar{a}\cdot\bar{a}\ =$ ___			
	A.	(1,4,9)	B.	$\sqrt{14}$
	C.	$(1,4,-9)$	D.	14
61.	$Volume\ of\ Cylinder\ of\ radius\ \ r\ and\ height\ \ h\ \ is=$ _____			
	A.	πr^2h	B.	$2\pi r^2h$
	C.	$\frac{1}{3}\pi r^2h$	D.	$\frac{4\pi r^2h}{3}$
૬૧.	r ત્રિજ્યા અને h ઉંચાઈ ધરાવતા નળાકાર નું ઘનફળ = _____			
	A.	πr^2h	B.	$2\pi r^2h$
	C.	$\frac{1}{3}\pi r^2h$	D.	$\frac{4\pi r^2h}{3}$
62.	$Surface\ area\ of\ Sphere\ having\ radius\ \ r\ is=$ _____			
	A.	$2\pi r^2$	B.	$4\pi r^2$
	C.	$\frac{\pi r^2h}{3}$	D.	$\frac{4\pi r^3}{3}$
૬૨.	r ત્રિજ્યા વાળા ગોલક ની સપાટી નું ક્ષેત્રફળ $is=$ _____			
	A.	$2\pi r^2$	B.	$4\pi r^2$
	C.	$\frac{\pi r^2h}{3}$	D.	$\frac{4\pi r^3}{3}$
63.	$Area\ of\ Square\ having\ perimeter\ 60\ cm\ is=$ _____			
	A.	$60\ cm^2$	B.	$3600\ cm^2$
	C.	$225\ cm^2$	D.	$1250\ cm^2$
૬૩.	$60\ cm$ પરિમિતિ ધરાવતા ચોરસ નું ક્ષેત્રફળ = _____			
	A.	$60\ cm^2$	B.	$3600\ cm^2$
	C.	$225\ cm^2$	D.	$1250\ cm^2$
64.	$Surface\ area\ of\ Cuboid\ \ is=$ _____			
	A.	$2(l+b+h)$	B.	$4(l\times b\times h)$
	C.	$4(lb\times bh\times hl)$	D.	$2(lb+bh+hl)$
૬૪.	લંબઘન ની બાહ્ય સપાટી નું ક્ષેત્રફળ $=$ _____			
	A.	$2(l+b+h)$	B.	$4(l\times b\times h)$
	C.	$4(lb\times bh\times hl)$	D.	$2(lb+bh+hl)$

65.	$Surface\ area\ of\ Cube\ having\ side\ 7\ cm\ is = \_\_\_\_\_$			
	A.	$294\ cm^2$	B.	$343\ cm^2$
	C.	$497\ cm^2$	D.	$216\ cm^2$
૬૫.	૭ cm બાજુ ધરાવતા સમઘન ની બાહ્ય સપાટી નું ક્ષેત્રફળ $= \_\_\_\_\_$			
	A.	$294\ cm^2$	B.	$343\ cm^2$
	C.	$497\ cm^2$	D.	$216\ cm^2$
66.	$Volume\ of\ Cone\ having\ radius\ r\ \ and\ height\ \ h\ \ is = \_\_\_\_\_$			
	A.	$\frac{\pi r^2 l}{3}$	B.	$4\pi r^2 h$
	C.	$\frac{\pi r^2 h}{3}$	D.	$\frac{4\pi l^3}{3}$
૬૬.	r ત્રિજ્યા અને h ઉંચાઈ ધરાવતા શંકુ નું ઘનફળ $= \_\_\_\_\_$			
	A.	$\frac{\pi r^2 l}{3}$	B.	$4\pi r^2 h$
	C.	$\frac{\pi r^2 h}{3}$	D.	$\frac{4\pi l^3}{3}$
67.	$for\ Cone\ r = radius; h = height\ and\ l = slant\ height\ then\ which\ one\ is\ true?$			
	A.	$r^2 + h^2 = l^2$	B.	$l^2 + h^2 = r^2$
	C.	$r^2 + l^2 = h^2$	D.	$r + l = h$
૬૭.	શંકુ માટે r ત્રિજ્યા અને h ઉંચાઈ અને lત્રાંસી ઉંચાઈ હોય તો નીચેના માંથી કયું સાચું છે?			
	A.	$r^2 + h^2 = l^2$	B.	$l^2 + h^2 = r^2$
	C.	$r^2 + l^2 = h^2$	D.	$r + l = h$
68.	$If\ Area\ of\ Square = Perimeter\ of\ Square\ then\ length\ of\ side\ is = \_\_\_\_\_$			
	A.	16	B.	12
	C.	8	D.	4
૬૮.	જો ચોરસ નું ક્ષેત્રફળ = ચોરસ ની પરિમિતિ તો બાજુની લંબાઈ $= \_\_\_\_\_$			
	A.	16	B.	12
	C.	8	D.	4
69.	$length = 50\ cm\ and\ width = 25\ cm\ then\ area\ of\ rectangle\ is = \_\_\_\_$			
	A.	$7500\ cm^2$	B.	$1250\ cm^2$
	C.	$5000\ cm^2$	D.	$75\ cm^2$
૬૯.	લંબાઈ $= 50\ cm\ and$ પહોળાઈ $= 25\ cm$ તો લંબચોરસ નું ક્ષેત્રફળ $= \_\_\_\_$			
	A.	$7500\ cm^2$	B.	$1250\ cm^2$
	C.	$5000\ cm^2$	D.	$75\ cm^2$
70.	$If\ Area\ of\ Circle\ is\ 9\pi\ then\ circumference\ of\ circle\ is = \_\_\_\_\_$			
	A.	6π	B.	81π
	C.	4π	D.	36π
૭૦.	9π ક્ષેત્રફળ ધરાવતા વર્તુળ નો પરિઘ $= \_\_\_\_\_$			
	A.	6π	B.	81π
	C.	4π	D.	36π

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