

Seat No.: _____

Enrolment No. _____

GUJARAT TECHNOLOGICAL UNIVERSITY
DIPLOMA ENGINEERING – SEMESTER – 1(C2D) - EXAMINATION – SUMMER-2022

Subject Code: C300001**Date : 24-08-2022****Subject Name: Basic Mathematics****Time: 02:30 PM TO 04:00 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.	$\log 32 - \log 8 = \underline{\hspace{2cm}}$			
	A.	$\log 24$	B.	$\log 8$
	C.	0	D.	$\log 4$
૧.	$\log 32 - \log 8 = \underline{\hspace{2cm}}$			
	A.	$\log 24$	B.	$\log 8$
	C.	0	D.	$\log 4$
2.	$\log_2 4 = \underline{\hspace{2cm}}$			
	A.	0	B.	2
	C.	1	D.	16
૨.	$\log_2 4 = \underline{\hspace{2cm}}$			
	A.	0	B.	2
	C.	1	D.	16
3.	If $\log_x 125 = 3$ then $x = \underline{\hspace{2cm}}$			
	A.	-5	B.	5
	C.	1/5	D.	-1/5
૩	જો $\log_x 125 = 3$ હોય તો $x = \underline{\hspace{2cm}}$			
	A.	-5	B.	5
	C.	1/5	D.	-1/5
4.	$\log_7 7 = \underline{\hspace{2cm}}$			
	A.	$\log 1$	B.	7^2
	C.	1	D.	7
૪.	$\log_7 7 = \underline{\hspace{2cm}}$			
	A.	$\log 1$	B.	7^2
	C.	1	D.	7
5.	$\log_3 243 = \underline{\hspace{2cm}}$			
	A.	2	B.	3
	C.	4	D.	5
૫.	$\log_3 243 = \underline{\hspace{2cm}}$			
	A.	2	B.	3
	C.	4	D.	5
6.	$\log 1 \cdot \log 2 \cdot \log 3 = \underline{\hspace{2cm}}$			
	A.	$\log 5$	B.	$\log 6$
	C.	0	D.	$\log 3$
૬.	$\log 1 \cdot \log 2 \cdot \log 3 = \underline{\hspace{2cm}}$			
	A.	$\log 5$	B.	$\log 6$
	C.	0	D.	$\log 3$

7.	$\log 3 + \log 2 = \underline{\hspace{2cm}}$			
	A.	$\log 6$	B.	$\log 5$
	C.	1	D.	0
૭.	$\log 3 + \log 2 = \underline{\hspace{2cm}}$			
	A.	$\log 6$	B.	$\log 5$
	C.	1	D.	0
8.	If $\log_2 x = 1$ then $x = \underline{\hspace{2cm}}$			
	A.	1	B.	2
	C.	-1	D.	0
૮.	જો $\log_2 x = 1$ હોય તો $x = \underline{\hspace{2cm}}$			
	A.	1	B.	2
	C.	-1	D.	0
9.	$\log_3 (1/9) = \underline{\hspace{2cm}}$			
	A.	0	B.	1
	C.	-1	D.	-2
૯.	$\log_3 (1/9) = \underline{\hspace{2cm}}$			
	A.	0	B.	1
	C.	-1	D.	-2
10.	$\frac{1}{\log_5 3} = \underline{\hspace{2cm}}$			
	A.	$\log_3 5$	B.	$\log_5 3$
	C.	$\log_3 15$	D.	$\log_{15} 3$
૧૦.	$\frac{1}{\log_5 3} = \underline{\hspace{2cm}}$			
	A.	$\log_3 5$	B.	$\log_5 3$
	C.	$\log_3 15$	D.	$\log_{15} 3$
11.	If $\begin{vmatrix} x & 1 \\ 4 & 2 \end{vmatrix} = 0$ then $x = \underline{\hspace{2cm}}$			
	A.	-2	B.	4
	C.	2	D.	1
૧૧.	જો $\begin{vmatrix} x & 1 \\ 4 & 2 \end{vmatrix} = 0$ હોય તો $x = \underline{\hspace{2cm}}$			
	A.	-2	A.	4
	C.	2	C.	1
12.	Order of the matrix $\begin{bmatrix} 1 & 2 \\ 0 & -1 \\ 3 & 4 \end{bmatrix}$ is $\underline{\hspace{2cm}}$			
	A.	2×3	B.	3×2
	C.	2×2	D.	3×3
૧૨.	શ્રેણિક $\begin{bmatrix} 1 & 2 \\ 0 & -1 \\ 3 & 4 \end{bmatrix}$ નો ક્રમ $\underline{\hspace{2cm}}$ છે.			
	A.	2×3	B.	3×2
	C.	2×2	D.	3×3
13.	If A is a square matrix then $A - A^T$ is $\underline{\hspace{2cm}}$ matrix			
	A.	Diagonal	B.	Symmetric
	C.	Row	D.	Skew -symmetric
૧૩.	જો A ચોરસ શ્રેણિક હોય તો $A - A^T$ $\underline{\hspace{2cm}}$ શ્રેણિક થાય.			
	A.	વિકર્ણ	B.	સંમિત

	C.	હાર	D.	વિસંમિત
14.	$AA^{-1} = \underline{\hspace{2cm}}$			
	A.	A	B.	I
	C.	O	D.	A^{-1}
૧૪.	$AA^{-1} = \underline{\hspace{2cm}}$			
	A.	A	B.	I
	C.	O	D.	A^{-1}
15.	$\begin{bmatrix} 1 & 2 \\ 5 & 6 \end{bmatrix} \times \begin{bmatrix} 5 & 6 \\ 2 & 1 \end{bmatrix} = \underline{\hspace{2cm}}$			
	A.	$\begin{bmatrix} 9 & 8 \\ 37 & 36 \end{bmatrix}$	B.	$\begin{bmatrix} 8 & 9 \\ 37 & 36 \end{bmatrix}$
	C.	$\begin{bmatrix} 37 & 8 \\ 9 & 36 \end{bmatrix}$	D.	$\begin{bmatrix} 9 & 37 \\ 8 & 36 \end{bmatrix}$
૧૫.	$\begin{bmatrix} 1 & 2 \\ 5 & 6 \end{bmatrix} \times \begin{bmatrix} 5 & 6 \\ 2 & 1 \end{bmatrix} = \underline{\hspace{2cm}}$			
	A.	$\begin{bmatrix} 9 & 8 \\ 37 & 36 \end{bmatrix}$	B.	$\begin{bmatrix} 8 & 9 \\ 37 & 36 \end{bmatrix}$
	C.	$\begin{bmatrix} 37 & 8 \\ 9 & 36 \end{bmatrix}$	D.	$\begin{bmatrix} 9 & 37 \\ 8 & 36 \end{bmatrix}$
16.	If order of matrices A and B are $p \times q$ and $q \times r$ respectively then AB is of order _____			
	A.	$p \times q$	B.	$q \times r$
	C.	$q \times q$	D.	$p \times r$
૧૬.	A અને B નો ક્રમ અનુક્રમે $p \times q$ અને $q \times r$ હોય તો AB નો ક્રમ _____ થાય			
	A.	$p \times q$	B.	$q \times r$
	C.	$q \times q$	D.	$p \times r$
17.	$(AB)^{-1} = \underline{\hspace{2cm}}$			
	A.	$A^{-1}B^{-1}$	B.	$A^{-1}B$
	C.	$B^{-1}A^{-1}$	D.	$B^{-1}A$
૧૭.	$(AB)^{-1} = \underline{\hspace{2cm}}$			
	A.	$A^{-1}B^{-1}$	B.	$A^{-1}B$
	C.	$B^{-1}A^{-1}$	D.	$B^{-1}A$
18.	$\begin{vmatrix} 1 & 2 & 3 \\ 3 & 2 & 1 \\ 2 & 4 & 6 \end{vmatrix} = \underline{\hspace{2cm}}$			
	A.	8	B.	6
	C.	-4	D.	0
૧૮.	$\begin{vmatrix} 1 & 2 & 3 \\ 3 & 2 & 1 \\ 2 & 4 & 6 \end{vmatrix} = \underline{\hspace{2cm}}$			
	A.	8	B.	6
	C.	-4	D.	0
19.	If $\begin{vmatrix} a & -5 \\ b & 5 \end{vmatrix} = 25$ then $a + b = \underline{\hspace{2cm}}$			
	A.	5	B.	-5
	C.	10	D.	-10
૧૯.	જો $\begin{vmatrix} a & -5 \\ b & 5 \end{vmatrix} = 25$ હોય તો $a + b = \underline{\hspace{2cm}}$			
	A.	5	B.	-5
	C.	10	D.	-10
	If $A_{4 \times 3}$ and $B_{2 \times 4}$ are matrices then number of elements of matrix $A \times B$ is _____			

20.	A.	12	B.	16
	C.	8	D.	10
૨૦.	જો $A_{4 \times 3}$ and $B_{2 \times 4}$ શ્રેણિકો હોય તો શ્રેણિક $A \times B$ ના ઘટકોની સંખ્યા _____ થાય.			
	A.	12	B.	16
	C.	8	D.	10
21.	If $A^2 - A + I = O$ then $A^{-1} =$ _____			
	A.	$A - I$	B.	$A + I$
	C.	$I - A$	D.	A^{-2}
૨૧.	જો $A^2 - A + I = O$ હોય તો $A^{-1} =$ _____			
	A.	$A - I$	B.	$A + I$
	C.	$I - A$	D.	A^{-2}
22.	$\begin{vmatrix} x-2 & 3 \\ 0 & x-2 \end{vmatrix} = 0$ then $x =$ _____			
	A.	-2	B.	2
	C.	0	D.	3
૨૨.	$\begin{vmatrix} x-2 & 3 \\ 0 & x-2 \end{vmatrix} = 0$ હોય તો $x =$ _____			
	A.	-2	B.	2
	C.	0	D.	3
23.	$\begin{vmatrix} 1 & 7 & -3 \\ -4 & 6 & 2 \\ 2 & -5 & 3 \end{vmatrix} =$ _____			
	A.	106	B.	126
	C.	116	D.	0
૨૩.	$\begin{vmatrix} 1 & 7 & -3 \\ -4 & 6 & 2 \\ 2 & -5 & 3 \end{vmatrix} =$ _____			
	A.	106	B.	126
	C.	116	D.	0
24.	$\begin{bmatrix} 1 & 2 \\ 3 & 4 \end{bmatrix} + \begin{bmatrix} -1 & -1 \\ 1 & 3 \end{bmatrix} =$ _____			
	A.	$\begin{bmatrix} 0 & 1 \\ 4 & 7 \end{bmatrix}$	B.	$\begin{bmatrix} 2 & 3 \\ 4 & 7 \end{bmatrix}$
	C.	$\begin{bmatrix} 2 & 1 \\ 4 & 5 \end{bmatrix}$	D.	$\begin{bmatrix} 2 & 1 \\ 4 & 7 \end{bmatrix}$
૨૪.	$\begin{bmatrix} 1 & 2 \\ 3 & 4 \end{bmatrix} + \begin{bmatrix} -1 & -1 \\ 1 & 3 \end{bmatrix} =$ _____			
	A.	$\begin{bmatrix} 0 & 1 \\ 4 & 7 \end{bmatrix}$	B.	$\begin{bmatrix} 2 & 3 \\ 4 & 7 \end{bmatrix}$
	C.	$\begin{bmatrix} 2 & 1 \\ 4 & 5 \end{bmatrix}$	D.	$\begin{bmatrix} 2 & 1 \\ 4 & 7 \end{bmatrix}$
25.	$\begin{bmatrix} 1 & -2 \\ 0 & 3 \\ 5 & 7 \end{bmatrix}^T =$ _____			
	A.	$\begin{bmatrix} 1 & -2 & 0 \\ 3 & 5 & 7 \end{bmatrix}$	B.	$\begin{bmatrix} 1 & -2 \\ 0 & 3 \\ 5 & 7 \end{bmatrix}$
	C.	$\begin{bmatrix} 1 & 0 & 5 \\ -2 & 3 & 7 \end{bmatrix}$	D.	none of these
૨૫.	$\begin{bmatrix} 1 & -2 \\ 0 & 3 \\ 5 & 7 \end{bmatrix}^T =$ _____			
	A.	$\begin{bmatrix} 1 & -2 & 0 \\ 3 & 5 & 7 \end{bmatrix}$	B.	$\begin{bmatrix} 1 & -2 \\ 0 & 3 \\ 5 & 7 \end{bmatrix}$
	C.	$\begin{bmatrix} 1 & 0 & 5 \\ -2 & 3 & 7 \end{bmatrix}$	D.	આમાંથી એક પણ નહીં

26.	adjoint matrix of matrix $A = \begin{bmatrix} 1 & 2 \\ 3 & -1 \end{bmatrix}$ is _____			
	A.	$\begin{bmatrix} 1 & -2 \\ 3 & -1 \end{bmatrix}$	B.	$\begin{bmatrix} -1 & -2 \\ -3 & 1 \end{bmatrix}$
	C.	$\begin{bmatrix} 1 & 2 \\ -3 & -1 \end{bmatrix}$	D.	$\begin{bmatrix} 1 & -2 \\ -3 & -1 \end{bmatrix}$
૨૬.	શ્રેણિક $A = \begin{bmatrix} 1 & 2 \\ 3 & -1 \end{bmatrix}$ નો સહઅવયવજ શ્રેણિક _____ થાય.			
	A.	$\begin{bmatrix} 1 & -2 \\ 3 & -1 \end{bmatrix}$	B.	$\begin{bmatrix} -1 & -2 \\ -3 & 1 \end{bmatrix}$
	C.	$\begin{bmatrix} 1 & 2 \\ -3 & -1 \end{bmatrix}$	D.	$\begin{bmatrix} 1 & -2 \\ -3 & -1 \end{bmatrix}$
27.	$[1 \ 3 \ 2] \times \begin{bmatrix} 1 \\ 2 \\ 1 \end{bmatrix} = \underline{\hspace{2cm}}$			
	A.	9	B.	$\begin{bmatrix} 1 \\ 6 \\ 2 \end{bmatrix}$
	C.	not possible	D.	$[9]$
૨૭.	$[1 \ 3 \ 2] \times \begin{bmatrix} 1 \\ 2 \\ 1 \end{bmatrix} = \underline{\hspace{2cm}}$			
	A.	9	B.	$\begin{bmatrix} 1 \\ 6 \\ 2 \end{bmatrix}$
	C.	શક્ય નથી	D.	$[9]$
28.	For matrices $A = \begin{bmatrix} 1 & 2 \\ 0 & 0 \end{bmatrix}$ and $B = \begin{bmatrix} 0 & 5 \\ 0 & 3 \end{bmatrix}$ then $AB = \underline{\hspace{2cm}}$			
	A.	$\begin{bmatrix} 0 & 0 \\ 0 & 0 \end{bmatrix}$	B.	$\begin{bmatrix} 0 & 10 \\ 0 & 0 \end{bmatrix}$
	C.	$\begin{bmatrix} 0 & 11 \\ 0 & 0 \end{bmatrix}$	D.	$\begin{bmatrix} 0 & 5 \\ 0 & 6 \end{bmatrix}$
૨૮.	શ્રેણિકો $A = \begin{bmatrix} 1 & 2 \\ 0 & 0 \end{bmatrix}$ અને $B = \begin{bmatrix} 0 & 5 \\ 0 & 3 \end{bmatrix}$ માટે $AB = \underline{\hspace{2cm}}$			
	A.	$\begin{bmatrix} 0 & 0 \\ 0 & 0 \end{bmatrix}$	B.	$\begin{bmatrix} 0 & 10 \\ 0 & 0 \end{bmatrix}$
	C.	$\begin{bmatrix} 0 & 11 \\ 0 & 0 \end{bmatrix}$	D.	$\begin{bmatrix} 0 & 5 \\ 0 & 6 \end{bmatrix}$
29.	$\cos(\pi + \theta) = \underline{\hspace{2cm}}$			
	A.	$\sin \theta$	B.	$\cos \theta$
	C.	$-\sin \theta$	D.	$-\cos \theta$
૨૯.	$\cos(\pi + \theta) = \underline{\hspace{2cm}}$			
	A.	$\sin \theta$	B.	$\cos \theta$
	C.	$-\sin \theta$	D.	$-\cos \theta$
30.	$\cos^2 30^\circ + \cos^2 60^\circ = \underline{\hspace{2cm}}$			
	A.	0	B.	1
	C.	-1	D.	2
૩૦.	$\cos^2 30^\circ + \cos^2 60^\circ = \underline{\hspace{2cm}}$			
	A.	0	B.	1
	C.	-1	D.	2
31.	$\tan\left(\frac{\pi}{2} - \theta\right) = \underline{\hspace{2cm}}$			
	A.	$\tan \theta$	B.	$\cot \theta$
	C.	$-\tan \theta$	D.	$-\cot \theta$
૩૧.	$\tan\left(\frac{\pi}{2} - \theta\right) = \underline{\hspace{2cm}}$			
	A.	$\tan \theta$	B.	$\cot \theta$

	C.	$-\tan \theta$	D.	$-\cot \theta$
32.	$\sin^{-1} \frac{1}{2} = \underline{\hspace{2cm}}$			
	A.	$\pi/2$	B.	$\pi/3$
	C.	$\pi/4$	D.	$\pi/6$
32.	$\sin^{-1} \frac{1}{2} = \underline{\hspace{2cm}}$			
	A.	$\pi/2$	B.	$\pi/3$
	C.	$\pi/4$	D.	$\pi/6$
33.	$1 + \tan^2 \theta = \underline{\hspace{2cm}}$			
	A.	$\sin^2 \theta$	B.	$\cos^2 \theta$
	C.	$\sec^2 \theta$	D.	$\operatorname{cosec}^2 \theta$
33.	$1 + \tan^2 \theta = \underline{\hspace{2cm}}$			
	A.	$\sin^2 \theta$	A.	$\cos^2 \theta$
	C.	$\sec^2 \theta$	C.	$\operatorname{cosec}^2 \theta$
34.	$135^\circ = \underline{\hspace{2cm}}$ રેડિયન			
	A.	$3\pi/4$	B.	$\pi/4$
	C.	$7\pi/4$	D.	π
34.	$135^\circ = \underline{\hspace{2cm}}$ radian			
	A.	$3\pi/4$	B.	$\pi/4$
	C.	$7\pi/4$	D.	π
35.	Principal period of the function $\sin 2x$ is $\underline{\hspace{2cm}}$.			
	A.	4π	B.	3π
	C.	π	D.	2π
35.	$\sin 2x$ નું મુખ્ય આવર્તમાન $\underline{\hspace{2cm}}$ છે.			
	A.	4π	B.	3π
	C.	π	D.	2π
36.	$\operatorname{cosec} 60^\circ = \underline{\hspace{2cm}}$			
	A.	$1/2$	B.	2
	C.	$\sqrt{3}/2$	D.	$2/\sqrt{3}$
36.	$\operatorname{cosec} 60^\circ = \underline{\hspace{2cm}}$			
	A.	$1/2$	B.	2
	C.	$\sqrt{3}/2$	D.	$2/\sqrt{3}$
37.	$\sin \frac{5\pi}{4} = \underline{\hspace{2cm}}$			
	A.	$\frac{1}{\sqrt{2}}$	B.	$-\frac{1}{\sqrt{2}}$
	C.	$\frac{1}{2}$	D.	$-\frac{1}{2}$
37.	$\sin \frac{5\pi}{4} = \underline{\hspace{2cm}}$			
	A.	$\frac{1}{\sqrt{2}}$	A.	$-\frac{1}{\sqrt{2}}$

	C.	$\frac{1}{2}$	C.	$-\frac{1}{2}$
38.	$\frac{2\pi}{3}$ radian = ____ degree			
	A.	30	B.	60
	C.	120	D.	180
3૮.	$\frac{2\pi}{3}$ રેડિયન = ____ degree			
	A.	30	B.	60
	C.	120	D.	180
39.	$\cos 75^\circ \cos 15^\circ - \sin 75^\circ \sin 15^\circ = \underline{\hspace{2cm}}$			
	A.	0	B.	-1
	C.	1	D.	2
૩૯.	$\cos 75^\circ \cos 15^\circ - \sin 75^\circ \sin 15^\circ = \underline{\hspace{2cm}}$			
	A.	0	B.	-1
	C.	1	D.	2
40.	$\sin(A+B) = \underline{\hspace{2cm}}$			
	A.	$\sin A \cos B + \cos A \sin B$	B.	$\sin A \sin B + \cos A \cos B$
	C.	$\sin A \sin B - \cos A \cos B$	D.	$\sin A \cos B - \cos A \sin B$
૪૦.	$\sin(A+B) = \underline{\hspace{2cm}}$			
	A.	$\sin A \cos B + \cos A \sin B$	B.	$\sin A \sin B + \cos A \cos B$
	C.	$\sin A \sin B - \cos A \cos B$	D.	$\sin A \cos B - \cos A \sin B$
41.	$\sin 3\theta = \underline{\hspace{2cm}}$			
	A.	$3\sin \theta - \sin^3 \theta$	B.	$3\sin \theta - 4\sin^3 \theta$
	C.	$\sin \theta - 4\sin^3 \theta$	D.	$3\sin 3\theta - 4\sin^3 \theta$
૪૧.	$\sin 3\theta = \underline{\hspace{2cm}}$			
	A.	$3\sin \theta - \sin^3 \theta$	B.	$3\sin \theta - 4\sin^3 \theta$
	C.	$\sin \theta - 4\sin^3 \theta$	D.	$3\sin 3\theta - 4\sin^3 \theta$
42.	$\tan^{-1} \frac{1}{2} + \tan^{-1} \frac{1}{3} = \underline{\hspace{2cm}}$			
	A.	$\pi/2$	B.	$\pi/4$
	C.	π	D.	none of these
૪૨.	$\tan^{-1} \frac{1}{2} + \tan^{-1} \frac{1}{3} = \underline{\hspace{2cm}}$			
	A.	$\pi/2$	B.	$\pi/4$
	C.	π	D.	આમાંથી એક પણ નહીં
43.	In $\triangle ABC$, $\sin(A+B) = \underline{\hspace{2cm}}$			
	A.	$-\sin C$	B.	$\cos C$
	C.	$-\cos C$	D.	$\sin C$
૪૩.	$\triangle ABC$ માં $\sin(A+B) = \underline{\hspace{2cm}}$			
	A.	$-\sin C$	A.	$\cos C$
	C.	$-\cos C$	C.	$\sin C$
44.	If $\cos^{-1} x = \frac{4}{5}$ then $\tan^{-1} x = \underline{\hspace{2cm}}$			
	A.	$\frac{4}{3}$	B.	$\frac{3}{4}$
	C.	$\frac{4}{5}$	D.	$\frac{3}{5}$
૪૪.	જો $\cos^{-1} x = \frac{4}{5}$ હોય તો $\tan^{-1} x = \underline{\hspace{2cm}}$			
	A.	$\frac{4}{3}$	B.	$\frac{3}{4}$
	C.	$\frac{4}{5}$	D.	$\frac{3}{5}$

45.	$\cos 2\theta =$ _____			
	A.	$2(\cos\theta - \sin\theta)$	B.	$\cos^2\theta - \sin^2\theta$
	C.	$2\sin\theta\cos\theta$	D.	$\cos^2\theta + \sin^2\theta$
૪૫.	$\cos 2\theta =$ _____			
	A.	$2(\cos\theta - \sin\theta)$	B.	$\cos^2\theta - \sin^2\theta$
	C.	$2\sin\theta\cos\theta$	D.	$\cos^2\theta + \sin^2\theta$
46.	$\sin^{-1} x + \cos^{-1} x =$ _____			
	A.	$\pi/2$	B.	$\pi/4$
	C.	$\pi/6$	D.	none of these
૪૬.	$\sin^{-1} x + \cos^{-1} x =$ _____			
	A.	$\pi/2$	B.	$\pi/4$
	C.	$\pi/6$	D.	આમાંથી એક પણ નહીં
47.	$\bar{i} \times \bar{j} =$ _____			
	A.	$-\bar{k}$	B.	$\bar{k}$
	C.	0	C.	1
૪૭.	$\bar{i} \times \bar{j} =$ _____			
	A.	$-\bar{k}$	B.	$\bar{k}$
	C.	0	C.	1
48.	If $\vec{a} = 3\bar{i} + 4\bar{j}$, $\vec{b} = \bar{i} + \sqrt{3}\bar{j}$ then $ \vec{a} + \vec{b} =$ _____			
	A.	1	B.	0
	C.	7	D.	11
૪૮.	જો $\vec{a} = 3\bar{i} + 4\bar{j}$, $\vec{b} = \bar{i} + \sqrt{3}\bar{j}$ હોય તો $ \vec{a} + \vec{b} =$ _____			
	A.	1	B.	0
	C.	7	D.	11
49.	_____ is a vector quantity.			
	A.	Displacement	B.	Distance
	C.	Mass	D.	Energy
૪૯.	_____ એ એક સદિશ રાશી છે.			
	A.	સ્થાનાંતર	B.	અંતર
	C.	વજન	D.	ઊર્જા
50.	If $\vec{a} = 2\bar{i} + \bar{j}$ and $\vec{b} = \bar{i} - 2\bar{j}$ then $2\vec{a} + 3\vec{b} =$ _____			
	A.	$-7\bar{i} - 4\bar{j}$	B.	$-7\bar{i} + 4\bar{j}$
	C.	$7\bar{i} - 4\bar{j}$	D.	$7\bar{i} + 4\bar{j}$
૫૦.	જો $\vec{a} = 2\bar{i} + \bar{j}$ અને $\vec{b} = \bar{i} - 2\bar{j}$ હોય તો $2\vec{a} + 3\vec{b} =$ _____			
	A.	$-7\bar{i} - 4\bar{j}$	A.	$-7\bar{i} + 4\bar{j}$
	C.	$7\bar{i} - 4\bar{j}$	C.	$7\bar{i} + 4\bar{j}$
51.	If $\vec{a}$ is a unit vector then $ \vec{a} =$ _____			
	A.	1	B.	-1
	C.	0	D.	2
૫૧.	જો $\vec{a}$ એકમ સદિશ હોય તો $ \vec{a} =$ _____			
	A.	1	B.	-1
	C.	0	D.	2
52.	If $\vec{x} + \vec{y} = \vec{x} + \vec{z}$ then $\vec{y} =$ _____			
	A.	$\vec{y}$	B.	$\vec{z}$
	C.	$\vec{x}$	D.	none of these
૫૨.	જો $\vec{x} + \vec{y} = \vec{x} + \vec{z}$ હોય તો $\vec{y} =$ _____			
	A.	$\vec{y}$	B.	$\vec{z}$
	C.	$\vec{x}$	D.	આમાંથી એક પણ નહીં
53.	If $\vec{a} = \bar{i} + 3\bar{j}$, $\vec{b} = \bar{i} - 3\bar{k}$ then $(\vec{a} + \vec{b}) \cdot (\vec{a} - \vec{b}) =$ _____			

	A.	0	B.	1
	C.	-1	D.	2
૫૩.	જો $\vec{a} = \vec{i} + 3\vec{j}, \vec{b} = \vec{i} - 3\vec{k}$ હોય તો $(\vec{a} + \vec{b}) \cdot (\vec{a} - \vec{b}) =$ _____			
	A.	0	B.	1
	C.	-1	D.	2
54.	If $\vec{a} = \vec{i} - 2\vec{j} + \vec{k}, \vec{b} = 3\vec{i} - 6\vec{j} + 3\vec{k}$ then $\vec{a} \times \vec{b} =$ _____			
	A.	$3\vec{i} - 2\vec{j} + 3\vec{k}$	B.	0
	C.	$3\vec{i} + 12\vec{j} + 3\vec{k}$	D.	none of these
૫૪.	જો $\vec{a} = \vec{i} - 2\vec{j} + \vec{k}, \vec{b} = 3\vec{i} - 6\vec{j} + 3\vec{k}$ હોય તો $\vec{a} \times \vec{b} =$ _____			
	A.	$3\vec{i} - 2\vec{j} + 3\vec{k}$	B.	0
	C.	$3\vec{i} + 12\vec{j} + 3\vec{k}$	D.	આમાંથી એક પણ નહીં
55.	If $\vec{a} = 3\vec{i} + 5\vec{j} - \vec{k}, \vec{b} = 2\vec{i} - 3\vec{j} + 5\vec{k}$ then $\vec{a} + \vec{b} =$ _____			
	A.	$-5\vec{i} - 2\vec{j} + 4\vec{k}$	B.	$3\vec{i} + 5\vec{j} - \vec{k}$
	C.	$5\vec{i} + 2\vec{j} + 4\vec{k}$	D.	none of these
૫૫.	જો $\vec{a} = 3\vec{i} + 5\vec{j} - \vec{k}, \vec{b} = 2\vec{i} - 3\vec{j} + 5\vec{k}$ હોય તો $\vec{a} + \vec{b} =$ _____			
	A.	$-5\vec{i} - 2\vec{j} + 4\vec{k}$	B.	$3\vec{i} + 5\vec{j} - \vec{k}$
	C.	$5\vec{i} + 2\vec{j} + 4\vec{k}$	D.	none of these
56.	If $\vec{a} = (1,2,3)$ and $\vec{b} = (4,4,-4)$ then $\vec{a} \cdot \vec{b} =$ _____			
	A.	1	B.	0
	C.	-1	D.	24
૫૬.	જો $\vec{a} = (1,2,3)$ અને $\vec{b} = (4,4,-4)$ હોય તો $\vec{a} \cdot \vec{b} =$ _____			
	A.	1	B.	0
	C.	-1	D.	24
57.	$\vec{a} \times \vec{b} =$ _____			
	A.	$-(\vec{b} \times \vec{a})$	B.	$ \vec{a} \vec{b} $
	C.	$\vec{a} \cdot \vec{b}$	D.	$\vec{b} \times \vec{a}$
૫૭.	$\vec{a} \times \vec{b} =$ _____			
	A.	$-(\vec{b} \times \vec{a})$	B.	$ \vec{a} \vec{b} $
	C.	$\vec{a} \cdot \vec{b}$	D.	$\vec{b} \times \vec{a}$
58.	Angle between vectors $\vec{a} = 2\vec{i} + 3\vec{j} - \vec{k}$ and $\vec{b} = 4\vec{i} - 2\vec{j} + 2\vec{k}$ is _____			
	A.	$\pi/4$	B.	$\pi/3$
	C.	$\pi/2$	D.	$\pi/6$
૫૮.	સદિશો $\vec{a} = 2\vec{i} + 3\vec{j} - \vec{k}$ અને $\vec{b} = 4\vec{i} - 2\vec{j} + 2\vec{k}$ વચ્ચેનો ખૂણો _____ છે.			
	A.	$\pi/4$	B.	$\pi/3$
	C.	$\pi/2$	D.	$\pi/6$
59.	Vectors $\vec{a} = \vec{i} + 2\vec{j} - 5\vec{k}, \vec{b} = 2\vec{i} + 4\vec{j} - 10\vec{k}$ are _____			
	A.	Unit vectors	B.	Parallel to each other
	C.	Perpendicular to each other	D.	none of these
૫૯.	સદિશો $\vec{a} = \vec{i} + 2\vec{j} - 5\vec{k}, \vec{b} = 2\vec{i} + 4\vec{j} - 10\vec{k}$ _____ છે.			
	A.	એકમ સદિશો	B.	પરસ્પર સમાંતર

	C.	પરસ્પર લંબ	D.	આમાંથી એક પણ નહી
60.	$(\bar{a} \times \bar{b}) + (\bar{b} \times \bar{a}) = \underline{\hspace{2cm}}$			
	A.	$\bar{0}$	B.	$2(\bar{a} \times \bar{b})$
	C.	$2\bar{a} + 2\bar{b}$	D.	not possible
૬૦.	$(\bar{a} \times \bar{b}) + (\bar{b} \times \bar{a}) = \underline{\hspace{2cm}}$			
	A.	$\bar{0}$	B.	$2(\bar{a} \times \bar{b})$
	C.	$2\bar{a} + 2\bar{b}$	D.	શક્ય નથી
61.	Area of a square is 36 sq.cm then its perimeter is _____ cm.			
	A	36	B	6
	C	12	D	24
૬૧.	એક ચોરસનું ક્ષેત્રફળ 36 ચો.સેમી. હોય તો તેની પરીમીતી _____ cm થાય .			
	A	36	B	6
	C	12	D	24
62.	Volume of a cube whose length of one side 5cm is _____ cm^3			
	A	5	B	25
	C	125	D	625
૬૨.	જેની એકબાજુનું માપ 5 cm હોય તેવા સમઘનનું ઘનફળ _____ cm^3 થાય.			
	A	5	B	25
	C	125	D	625
63.	The circumference of a circle whose radius is 7 cm. is			
	A.	154cm	B.	44cm
	C.	14cm	D.	48cm
૬૩.	7 cm. ત્રિજ્યાવાળા વર્તુળ નો પરિધ _____ છે.			
	A.	154cm	B.	44cm
	C.	14cm	D.	48cm
64.	The area of equilateral triangle is _____ whose length of each side is 2 m			
	A.	$\sqrt{3} m^2$	B.	$3 m^2$
	C.	$4 m^2$	D.	$9 m^2$
૬૪.	જેની બાજુની લંબાઈ 2 m હોય તેવા સમબાજુ ત્રિકોણનું ક્ષેત્રફળ _____ છે.			
	A.	$\sqrt{3} m^2$	B.	$3 m^2$
	C.	$4 m^2$	D.	$9 m^2$
65.	Volume of a cylinder with radius r and height h is _____			
	A.	$\pi r h$	B.	$\pi r^2 h$
	C.	$\frac{1}{3} \pi r^2 h$	D.	$\pi r^3 h$
૬૫.	જેની ત્રિજ્યા r અને ઊંચાઈ h હોય તેવા નળાકારનું ઘનફળ _____ થાય .			
	A.	$\pi r h$	B.	$\pi r^2 h$
	C.	$\frac{1}{3} \pi r^2 h$	D.	$\pi r^3 h$
66.	The area of triangle whose sides are 3,4,5 unit is _____			
	A.	6 unit	B.	12 unit
	C.	30 unit	D.	60 unit
૬૬.	જેની બાજુઓના માપ 3,4,5 એકમ હોય તેવા ત્રિકોણનું ક્ષેત્રફળ _____ એકમ થાય.			
	A.	6 એકમ	B.	12 એકમ
	C.	30 એકમ	D.	60 એકમ
67.	1 litre = _____ cm^3			
	A.	10	B.	100
	C.	1000	D.	10000

૬૭.	1 litre = _____ cm^3			
	A.	10	B.	100
	C.	1000	D.	10000
68.	Volume of Sphere of radius r is _____			
	A.	$\frac{1}{3}\pi r^3$	B.	$\frac{2}{3}\pi r^3$
	C.	$\frac{4}{3}\pi r^3$	D.	πr^2
૬૮.	r ત્રિજ્યાવાળા ગોલકનું ધનફળ _____ થાય			
	A.	$\frac{1}{3}\pi r^3$	B.	$\frac{2}{3}\pi r^3$
	C.	$\frac{4}{3}\pi r^3$	D.	πr^2
69.	Volume of a cone is 9856 cube cm and radius is 14 cm then slant height is _____ cm.			
	A.	20	B.	50
	C.	10	D.	100
૬૯.	એક શંકુનું ધનફળ 9856 ઘન સેમી. અને ત્રિજ્યા 14 સેમી. હોય તો તેની ત્રાંસી ઉંચાઈ _____ સેમી. થાય.			
	A.	20	B.	50
	C.	10	D.	100
70.	If we double the radius of the sphere then its volume would be _____ times than original volume.			
	A.	2	B.	4
	C.	8	D.	16
૭૦.	એક ગોલકની ત્રિજ્યા બમણી કરવામા આવે તો તેનું ધનફળ _____ ગણું થાય.			
	A.	2	B.	4
	C.	8	D.	16
