

Gujarat Technological University

Diploma Engineering C to D Bridge Course Examination

Subject Code: C300001/DA300001**Date: 01-06 -2019****Subject Name: Basic Mathematics****Time: 02:30 PM TO 04:00 PM****Total Marks: 70****Instructions:**

1. Attempt all questions.
2. Make suitable assumption wherever necessary.
3. Each question is of 1 mark.
4. Use of SIMPLE CALCULATOR is permissible. (Scientific/Higher Version not allowed)
5. English version is authentic.

No.	Question Text and Option. પ્રશ્ન અને વિકલ્પો.			
1.	$\log 32 \div \log 16 = \underline{\hspace{2cm}}$			
	A.	$\frac{5}{4}$	B.	$\frac{4}{5}$
	C.	2	D.	16
૧.	$\log 32 \div \log 16 = \underline{\hspace{2cm}}$			
	A.	$\frac{5}{4}$	A.	$\frac{4}{5}$
	C.	2	C.	16
2.	$\log_b a \cdot \log_c b \cdot \log_a c = \underline{\hspace{2cm}}$			
	A.	0	B.	1
	C.	$\log(a + b + c)$	D.	$\log(a \cdot b \cdot c)$
૨.	$\log_b a \cdot \log_c b \cdot \log_a c = \underline{\hspace{2cm}}$			
	A.	0	B.	1
	C.	$\log(a + b + c)$	D.	$\log(a \cdot b \cdot c)$
3.	If $\log_2 x = 5$ then $x = \underline{\hspace{2cm}}$			
	A.	1	B.	0
	C.	32	D.	25
૩.	જો $\log_2 x = 5$ હોય તો $x = \underline{\hspace{2cm}}$			
	A.	1	B.	0
	C.	32	D.	25
4.	$\log_2 1 \cdot \log_3 2 \cdot \log_4 3 = \underline{\hspace{2cm}}$			
	A.	$\frac{1}{4}$	B.	$\frac{1}{\log_2 4}$
	C.	$\log_2 4$	D.	0
૪.	$\log_2 1 \cdot \log_3 2 \cdot \log_4 3 = \underline{\hspace{2cm}}$			
	A.	$\frac{1}{4}$	B.	$\frac{1}{\log_2 4}$
	C.	$\log_2 4$	D.	0
5.	$\log_a a = \underline{\hspace{2cm}}$			
	A.	0	B.	-1
	C.	a	D.	1
૫.	$\log_a a = \underline{\hspace{2cm}}$			
	A.	0	B.	-1
	C.	a	D.	1
6.	$\log x^n = \underline{\hspace{2cm}}$			
	A.	n	B.	x
	C.	$n \log x$	D.	$x \log n$

6.	$\log x^n = \underline{\hspace{2cm}}$			
	A.	n	B.	x
	C.	$n \log x$	D.	$x \log n$
7.	$5^{\log_5 3} = \underline{\hspace{2cm}}$			
	A.	3	B.	125
	C.	5	D.	1
8.	$5^{\log_5 3} = \underline{\hspace{2cm}}$			
	A.	3	B.	125
	C.	5	D.	1
9.	If $\log(x-1) + \log(x+1) = \log 8$ then $x = \underline{\hspace{2cm}}$			
	A.	1	B.	3
	C.	-1	D.	0
10.	જો $\log(x-1) + \log(x+1) = \log 8$ હોય તો $x = \underline{\hspace{2cm}}$			
	A.	1	B.	3
	C.	-1	D.	0
11.	$\log(x \div y) = \underline{\hspace{2cm}}$			
	A.	$\log x + \log y$	B.	$\log x \cdot \log y$
	C.	$\log x - \log y$	D.	$\log x \div \log y$
12.	$\log(x \div y) = \underline{\hspace{2cm}}$			
	A.	$\log x + \log y$	B.	$\log x \cdot \log y$
	C.	$\log x - \log y$	D.	$\log x \div \log y$
13.	$\log(x \cdot y) = \underline{\hspace{2cm}}$			
	A.	$\log x + \log y$	B.	$\log x \cdot \log y$
	C.	$\log x - \log y$	D.	$\log x \div \log y$
14.	$\log(x \cdot y) = \underline{\hspace{2cm}}$			
	A.	$\log x + \log y$	B.	$\log x \cdot \log y$
	C.	$\log x - \log y$	D.	$\log x \div \log y$
15.	$\begin{vmatrix} \cos\theta & \sin\theta \\ -\sin\theta & \cos\theta \end{vmatrix} = \underline{\hspace{2cm}}$			
	A.	-1	B.	1
	C.	2	D.	0
16.	$\begin{vmatrix} \cos\theta & \sin\theta \\ -\sin\theta & \cos\theta \end{vmatrix} = \underline{\hspace{2cm}}$			
	A.	-1	B.	1
	C.	2	D.	0
17.	If $\begin{vmatrix} x & 4 \\ -2 & 2 \end{vmatrix} = 0$ then $x = \underline{\hspace{2cm}}$			
	A.	-4	B.	2
	C.	4	D.	8
18.	જો $\begin{vmatrix} x & 4 \\ -2 & 2 \end{vmatrix} = 0$ હોય તો $x = \underline{\hspace{2cm}}$			
	A.	-4	B.	2
	C.	4	D.	8
19.	$\begin{vmatrix} \log_6 3 & \log_6 2 \\ -1 & 1 \end{vmatrix} = \underline{\hspace{2cm}}$			
	A.	1	B.	0
	C.	2	D.	-1
20.	$\begin{vmatrix} \log_6 3 & \log_6 2 \\ -1 & 1 \end{vmatrix} = \underline{\hspace{2cm}}$			
	A.	1	B.	0
	C.	2	D.	-1
21.	If $A = \begin{bmatrix} 1 & 1 \\ 1 & 1 \end{bmatrix}$ then $A^2 = \underline{\hspace{2cm}}$			
	A.	$2A$	B.	I
	C.	A	D.	O
22.	જો $A = \begin{bmatrix} 1 & 1 \\ 1 & 1 \end{bmatrix}$ હોય તો $A^2 = \underline{\hspace{2cm}}$			

	A.	$2A$	B.	I
	C.	A	D.	O
15.	Unit matrix $I =$ _____			
	A.	$\begin{bmatrix} 0 & 1 \\ 1 & 0 \end{bmatrix}$	B.	$\begin{bmatrix} 0 & 0 \\ 0 & 0 \end{bmatrix}$
	C.	$\begin{bmatrix} 1 & 1 \\ 1 & 1 \end{bmatrix}$	D.	$\begin{bmatrix} 1 & 0 \\ 0 & 1 \end{bmatrix}$
૧૫.	એકમ શ્રેણિક $I =$ _____			
	A.	$\begin{bmatrix} 0 & 1 \\ 1 & 0 \end{bmatrix}$	B.	$\begin{bmatrix} 0 & 0 \\ 0 & 0 \end{bmatrix}$
	C.	$\begin{bmatrix} 1 & 1 \\ 1 & 1 \end{bmatrix}$	D.	$\begin{bmatrix} 1 & 0 \\ 0 & 1 \end{bmatrix}$
16.	Size of the matrix $A = \begin{bmatrix} 2 & -3 & 5 \\ 0 & -1 & 4 \end{bmatrix}$ is _____			
	A.	3×2	B.	2×3
	C.	2×2	D.	3×3
૧૬.	શ્રેણિક $A = \begin{bmatrix} 2 & -3 & 5 \\ 0 & -1 & 4 \end{bmatrix}$ નો કદ = _____			
	A.	3×2	B.	2×3
	C.	2×2	D.	3×3
17.	If $A = \begin{bmatrix} 2 & 0 \\ 3 & 1 \\ 5 & 4 \end{bmatrix}$ then $A^T =$ _____			
	A.	$\begin{bmatrix} 2 & 0 \\ 3 & 1 \\ 5 & 4 \end{bmatrix}$	B.	$\begin{bmatrix} 0 & 0 \\ 0 & 0 \\ 0 & 0 \end{bmatrix}$
	C.	$\begin{bmatrix} 2 & 3 & 5 \\ 0 & 1 & 4 \end{bmatrix}$	D.	$\begin{bmatrix} 0 & 0 & 0 \\ 0 & 0 & 0 \end{bmatrix}$
૧૭.	જો $A = \begin{bmatrix} 2 & 0 \\ 3 & 1 \\ 5 & 4 \end{bmatrix}$ હોય તો $A^T =$ _____			
	A.	$\begin{bmatrix} 2 & 0 \\ 3 & 1 \\ 5 & 4 \end{bmatrix}$	B.	$\begin{bmatrix} 0 & 0 \\ 0 & 0 \\ 0 & 0 \end{bmatrix}$
	C.	$\begin{bmatrix} 2 & 3 & 5 \\ 0 & 1 & 4 \end{bmatrix}$	D.	$\begin{bmatrix} 0 & 0 & 0 \\ 0 & 0 & 0 \end{bmatrix}$
18.	If $A = \begin{bmatrix} 2 & 1 \\ 5 & 3 \end{bmatrix}$ then $A^{-1} =$ _____			
	A.	$\begin{bmatrix} 2 & 5 \\ 1 & 3 \end{bmatrix}$	B.	$\begin{bmatrix} 3 & -1 \\ -5 & 2 \end{bmatrix}$
	C.	$\begin{bmatrix} 1 & 0 \\ 0 & 1 \end{bmatrix}$	D.	$\begin{bmatrix} 0 & 1 \\ 1 & 0 \end{bmatrix}$
૧૮.	જો $A = \begin{bmatrix} 2 & 1 \\ 5 & 3 \end{bmatrix}$ હોય તો $A^{-1} =$ _____			
	A.	$\begin{bmatrix} 2 & 5 \\ 1 & 3 \end{bmatrix}$	B.	$\begin{bmatrix} 3 & -1 \\ -5 & 2 \end{bmatrix}$
	C.	$\begin{bmatrix} 1 & 0 \\ 0 & 1 \end{bmatrix}$	D.	$\begin{bmatrix} 0 & 1 \\ 1 & 0 \end{bmatrix}$
19.	$\begin{bmatrix} 2 & 5 \\ -4 & 3 \end{bmatrix} + \begin{bmatrix} 2 & -5 \\ 4 & 1 \end{bmatrix} =$ _____			
	A.	$4I$	B.	$5I$
	C.	$2I$	D.	$3I$
૧૯.	$\begin{bmatrix} 2 & 5 \\ -4 & 3 \end{bmatrix} + \begin{bmatrix} 2 & -5 \\ 4 & 1 \end{bmatrix} =$ _____			
	A.	$4I$	B.	$5I$
	C.	$2I$	D.	$3I$
20.	$\begin{vmatrix} 0 & 0 & 0 \\ 1 & 2 & 3 \\ 2 & 3 & 4 \end{vmatrix} =$ _____			
	A.	4	B.	0

	C.	2	D.	1
20.	$\begin{vmatrix} 0 & 0 & 0 \\ 1 & 2 & 3 \\ 2 & 3 & 4 \end{vmatrix} = \underline{\hspace{2cm}}$			
	A.	4	B.	0
	C.	2	D.	1
21.	$[2 \ -1 \ 3] \begin{bmatrix} 3 \\ 3 \\ 5 \end{bmatrix} = \underline{\hspace{2cm}}$			
	A.	[21]	B.	[17]
	C.	[18]	D.	[1]
22.	$[2 \ -1 \ 3] \begin{bmatrix} 3 \\ 3 \\ 5 \end{bmatrix} = \underline{\hspace{2cm}}$			
	A.	[21]	B.	[17]
	C.	[18]	D.	[1]
23.	$\begin{bmatrix} 2 & 1 \\ -4 & 3 \end{bmatrix} \cdot \begin{bmatrix} 2 & 1 \\ 4 & 1 \end{bmatrix} = \underline{\hspace{2cm}}$			
	A.	$\begin{bmatrix} 1 & 0 \\ 0 & 1 \end{bmatrix}$	B.	$\begin{bmatrix} 8 & 4 \\ 3 & -1 \end{bmatrix}$
	C.	$\begin{bmatrix} 4 & -1 \\ 8 & 3 \end{bmatrix}$	D.	$\begin{bmatrix} 8 & 3 \\ 4 & -1 \end{bmatrix}$
24.	$\begin{bmatrix} 2 & 1 \\ -4 & 3 \end{bmatrix} \cdot \begin{bmatrix} 2 & 1 \\ 4 & 1 \end{bmatrix} = \underline{\hspace{2cm}}$			
	A.	$\begin{bmatrix} 1 & 0 \\ 0 & 1 \end{bmatrix}$	B.	$\begin{bmatrix} 8 & 4 \\ 3 & -1 \end{bmatrix}$
	C.	$\begin{bmatrix} 4 & -1 \\ 8 & 3 \end{bmatrix}$	D.	$\begin{bmatrix} 8 & 3 \\ 4 & -1 \end{bmatrix}$
25.	If $\begin{bmatrix} 2x+5 & 1 \\ -4 & 3 \end{bmatrix} = \begin{bmatrix} 1 & 1 \\ -4 & 3 \end{bmatrix}$ then $x = \underline{\hspace{2cm}}$			
	A.	2	B.	-2
	C.	1	D.	-1
26.	જો $\begin{bmatrix} 2x+5 & 1 \\ -4 & 3 \end{bmatrix} = \begin{bmatrix} 1 & 1 \\ -4 & 3 \end{bmatrix}$ હોય તો $x = \underline{\hspace{2cm}}$			
	A.	2	B.	-2
	C.	1	D.	-1
27.	$2 \begin{bmatrix} -1 & 1 \\ -3 & 5 \end{bmatrix} - \begin{bmatrix} 2 & -1 \\ 4 & -1 \end{bmatrix} = \underline{\hspace{2cm}}$			
	A.	$\begin{bmatrix} -10 & 11 \\ -4 & 3 \end{bmatrix}$	B.	$\begin{bmatrix} 4 & 3 \\ 10 & 11 \end{bmatrix}$
	C.	$\begin{bmatrix} -4 & 3 \\ -10 & 11 \end{bmatrix}$	D.	$\begin{bmatrix} -4 & 3 \\ -10 & 10 \end{bmatrix}$
28.	$2 \begin{bmatrix} -1 & 1 \\ -3 & 5 \end{bmatrix} - \begin{bmatrix} 2 & -1 \\ 4 & -1 \end{bmatrix} = \underline{\hspace{2cm}}$			
	A.	$\begin{bmatrix} -10 & 11 \\ -4 & 3 \end{bmatrix}$	B.	$\begin{bmatrix} 4 & 3 \\ 10 & 11 \end{bmatrix}$
	C.	$\begin{bmatrix} -4 & 3 \\ -10 & 11 \end{bmatrix}$	D.	$\begin{bmatrix} -4 & 3 \\ -10 & 10 \end{bmatrix}$
29.	If $A = \begin{bmatrix} 0 & 1 \\ 1 & 0 \end{bmatrix}$ then $A^3 = \underline{\hspace{2cm}}$			
	A.	$\begin{bmatrix} 0 & 1 \\ 1 & 0 \end{bmatrix}$	B.	$\begin{bmatrix} 0 & -1 \\ -1 & 0 \end{bmatrix}$
	C.	$\begin{bmatrix} 1 & 0 \\ 0 & 1 \end{bmatrix}$	D.	$\begin{bmatrix} -1 & 0 \\ 0 & -1 \end{bmatrix}$
30.	જો $A = \begin{bmatrix} 0 & 1 \\ 1 & 0 \end{bmatrix}$ હોય તો $A^3 = \underline{\hspace{2cm}}$			
	A.	$\begin{bmatrix} 0 & 1 \\ 1 & 0 \end{bmatrix}$	B.	$\begin{bmatrix} 0 & -1 \\ -1 & 0 \end{bmatrix}$

	C.	$\begin{bmatrix} 1 & 0 \\ 0 & 1 \end{bmatrix}$	D.	$\begin{bmatrix} -1 & 0 \\ 0 & -1 \end{bmatrix}$
26.	$\tan(30^\circ) = \underline{\hspace{2cm}}$			
	A.	$\sqrt{3}$	B.	1
	C.	$\frac{\sqrt{3}}{2}$	D.	$\frac{1}{\sqrt{3}}$
26.	$\tan(30^\circ) = \underline{\hspace{2cm}}$			
	A.	$\sqrt{3}$	B.	1
	C.	$\frac{\sqrt{3}}{2}$	D.	$\frac{1}{\sqrt{3}}$
27.	Period of $\sin \theta$ is $\underline{\hspace{2cm}}$			
	A.	0	B.	2π
	C.	1	D.	π
28.	$\sin \theta$ ର ଆବର୍ତ୍ତମାନ = $\underline{\hspace{2cm}}$			
	A.	0	B.	2π
	C.	1	D.	π
28.	$60^\circ = \underline{\hspace{2cm}}$ radian			
	A.	$\frac{\pi}{2}$	B.	$\frac{\pi}{3}$
	C.	$\frac{\pi}{4}$	D.	$\frac{\pi}{6}$
28.	$60^\circ = \underline{\hspace{2cm}}$ ରେଡିଆନ			
	A.	$\frac{\pi}{2}$	B.	$\frac{\pi}{3}$
	C.	$\frac{\pi}{4}$	D.	$\frac{\pi}{6}$
29.	$\sin\left(\frac{\pi}{2} + \theta\right) = \underline{\hspace{2cm}}$			
	A.	$\cos \theta$	B.	$-\cos \theta$
	C.	$\sin \theta$	D.	$-\sin \theta$
29.	$\sin\left(\frac{\pi}{2} + \theta\right) = \underline{\hspace{2cm}}$			
	A.	$\cos \theta$	B.	$-\cos \theta$
	C.	$\sin \theta$	D.	$-\sin \theta$
30.	$\sin(\pi + \theta) = \underline{\hspace{2cm}}$			
	A.	$\cos \theta$	B.	$-\cos \theta$
	C.	$\sin \theta$	D.	$-\sin \theta$
30.	$\sin(\pi + \theta) = \underline{\hspace{2cm}}$			
	A.	$\cos \theta$	B.	$-\cos \theta$
	C.	$\sin \theta$	D.	$-\sin \theta$
31.	$4\pi = \underline{\hspace{2cm}}$			
	A.	360°	B.	300°
	C.	720°	D.	180°
31.	$4\pi = \underline{\hspace{2cm}}$			
	A.	360°	B.	300°
	C.	720°	D.	180°
32.	$\cos^2 39^\circ + \sin^2 39^\circ = \underline{\hspace{2cm}}$			
	A.	1	B.	0
	C.	-1	D.	2π
32.	$\cos^2 39^\circ + \sin^2 39^\circ = \underline{\hspace{2cm}}$			
	A.	1	B.	0
	C.	-1	D.	2π
33.	$\sin(\alpha + \beta) = \underline{\hspace{2cm}}$			

	A.	$\sin \alpha \cos \beta + \cos \alpha \sin \beta$	B.	$\cos \alpha \cos \beta + \sin \alpha \sin \beta$
	C.	$\sin \alpha \cos \beta - \cos \alpha \sin \beta$	D.	$\cos \alpha \cos \beta - \sin \alpha \sin \beta$
33.	$\sin(\alpha + \beta) = \underline{\hspace{2cm}}$			
	A.	$\sin \alpha \cos \beta + \cos \alpha \sin \beta$	B.	$\cos \alpha \cos \beta + \sin \alpha \sin \beta$
	C.	$\sin \alpha \cos \beta - \cos \alpha \sin \beta$	D.	$\cos \alpha \cos \beta - \sin \alpha \sin \beta$
34.	$\cos 2\alpha = \underline{\hspace{2cm}}$			
	A.	$\cos^2 \alpha + \sin^2 \alpha$	B.	$\cos^2 \alpha - \sin^2 \alpha$
	C.	$2\sin \alpha \cos \alpha$	D.	$1 - \sin^2 \alpha$
38.	$\cos 2\alpha = \underline{\hspace{2cm}}$			
	A.	$\cos^2 \alpha + \sin^2 \alpha$	B.	$\cos^2 \alpha - \sin^2 \alpha$
	C.	$2\sin \alpha \cos \alpha$	D.	$1 - \sin^2 \alpha$
35.	$\cos^2 41^\circ + \cos^2 49^\circ = \underline{\hspace{2cm}}$			
	A.	-1	B.	2
	C.	0	D.	1
34.	$\cos^2 41^\circ + \cos^2 49^\circ = \underline{\hspace{2cm}}$			
	A.	-1	B.	2
	C.	0	D.	1
36.	$\sin 75^\circ + \sin 15^\circ = \underline{\hspace{2cm}}$			
	A.	1	B.	0
	C.	$\frac{\sqrt{3}}{2}$	D.	$\sqrt{\frac{3}{2}}$
38.	$\sin 75^\circ + \sin 15^\circ = \underline{\hspace{2cm}}$			
	A.	1	B.	0
	C.	$\frac{\sqrt{3}}{2}$	D.	$\sqrt{\frac{3}{2}}$
37.	$\cos 90^\circ \cos 60^\circ \sin 30^\circ = \underline{\hspace{2cm}}$			
	A.	1	B.	$\frac{1}{2}$
	C.	0	D.	$\frac{1}{4}$
39.	$\cos 90^\circ \cos 60^\circ \sin 30^\circ = \underline{\hspace{2cm}}$			
	A.	1	B.	$\frac{1}{2}$
	C.	0	D.	$\frac{1}{4}$
38.	For $\triangle ABC$, $\tan(B + C) = \underline{\hspace{2cm}}$			
	A.	$\tan A$	B.	$-\tan A$
	C.	$\cot A$	D.	$-\cot A$
38.	$\triangle ABC$ માટે, $\tan(B + C) = \underline{\hspace{2cm}}$			
	A.	$\tan A$	B.	$-\tan A$
	C.	$\cot A$	D.	$-\cot A$
39.	$\tan^{-1}\left(\frac{4}{5}\right) + \tan^{-1}\left(\frac{5}{4}\right) = \underline{\hspace{2cm}}$			
	A.	0	B.	$\frac{3\pi}{2}$
	C.	$-\frac{\pi}{2}$	D.	$\frac{\pi}{2}$
38.	$\tan^{-1}\left(\frac{4}{5}\right) + \tan^{-1}\left(\frac{5}{4}\right) = \underline{\hspace{2cm}}$			
	A.	0	B.	$\frac{3\pi}{2}$
	C.	$-\frac{\pi}{2}$	D.	$\frac{\pi}{2}$

40.	$\cos^{-1}\left(-\frac{1}{\sqrt{2}}\right) = \underline{\hspace{2cm}}$			
	A.	$-\frac{3\pi}{4}$	B.	$\frac{3\pi}{4}$
	C.	$-\frac{\pi}{4}$	D.	$\frac{\pi}{4}$
૪૦.	$\cos^{-1}\left(-\frac{1}{\sqrt{2}}\right) = \underline{\hspace{2cm}}$			
	A.	$-\frac{3\pi}{4}$	B.	$\frac{3\pi}{4}$
	C.	$-\frac{\pi}{4}$	D.	$\frac{\pi}{4}$
41.	$\sin 225^\circ = \underline{\hspace{2cm}}$			
	A.	$\frac{\sqrt{3}}{2}$	B.	$-\frac{\sqrt{3}}{2}$
	C.	$\frac{1}{\sqrt{2}}$	D.	$-\frac{1}{\sqrt{2}}$
૪૧.	$\sin 225^\circ = \underline{\hspace{2cm}}$			
	A.	$\frac{\sqrt{3}}{2}$	B.	$-\frac{\sqrt{3}}{2}$
	C.	$\frac{1}{\sqrt{2}}$	D.	$-\frac{1}{\sqrt{2}}$
42.	$\cos\left(\frac{\pi}{5}\right) + \cos\left(\frac{6\pi}{5}\right) = \underline{\hspace{2cm}}$			
	A.	0	B.	1
	C.	-1	D.	2
૪૨.	$\cos\left(\frac{\pi}{5}\right) + \cos\left(\frac{6\pi}{5}\right) = \underline{\hspace{2cm}}$			
	A.	0	B.	1
	C.	-1	D.	2
43.	If $\sin\theta = -2$ then θ lies in <u> </u> quadrant.			
	A.	First	B.	Second
	C.	Third	D.	Not possible
૪૩.	જો $\sin\theta = -2$ હોય તો θ <u> </u> ચરણમાં હોય.			
	A.	પ્રથમ	B.	દ્વિતીય
	C.	તૃતીય	D.	શક્ય નથી
44.	Period of $\sin(3x - 5) = \underline{\hspace{2cm}}$			
	A.	$\frac{3\pi}{2}$	B.	$\frac{2\pi}{3}$
	C.	2π	D.	π
૪૪.	$\sin(3x - 5)$ નું આવર્તમાન = <u> </u>			
	A.	$\frac{3\pi}{2}$	B.	$\frac{2\pi}{3}$
	C.	2π	D.	π
45.	$\sin\left(\frac{\pi}{8}\right) = \underline{\hspace{2cm}}$			
	A.	$\frac{\sqrt{2 - \sqrt{2}}}{2}$	B.	$\frac{\sqrt{2 + \sqrt{2}}}{2}$
	C.	$\frac{2 - \sqrt{2}}{4}$	D.	$\frac{2 + \sqrt{2}}{4}$
૪૫.	$\sin\left(\frac{\pi}{8}\right) = \underline{\hspace{2cm}}$			

	A.	$\frac{\sqrt{2-\sqrt{2}}}{2}$	B.	$\frac{\sqrt{2+\sqrt{2}}}{2}$
	C.	$\frac{2-\sqrt{2}}{4}$	D.	$\frac{2+\sqrt{2}}{4}$
46.	$ i-2j+3k = \underline{\hspace{2cm}}$			
	A.	$\sqrt{13}$	B.	$\sqrt{6}$
	C.	$\sqrt{14}$	D.	$\sqrt{2}$
૪૬.	$ i-2j+3k = \underline{\hspace{2cm}}$			
	A.	$\sqrt{13}$	B.	$\sqrt{6}$
	C.	$\sqrt{14}$	D.	$\sqrt{2}$
47.	If $x(1,1) - y(2,1) = (-1,0)$ then $(x,y) = \underline{\hspace{2cm}}$			
	A.	$(-1,-1)$	B.	$(1,1)$
	C.	$(1,-1)$	D.	$(-1,1)$
૪૭.	જો $x(1,1) - y(2,1) = (-1,0)$ હોય તો $(x,y) = \underline{\hspace{2cm}}$			
	A.	$(-1,-1)$	B.	$(1,1)$
	C.	$(1,-1)$	D.	$(-1,1)$
48.	A unit vector along $3i-4j = \underline{\hspace{2cm}}$			
	A.	$\frac{3i+4j}{25}$	B.	$\frac{3i-4j}{25}$
	C.	$\frac{3i+4j}{5}$	D.	$\frac{3i-4j}{5}$
૪૮.	$3i-4j$ ની દિશામાં એકમ સદિશ $= \underline{\hspace{2cm}}$			
	A.	$\frac{3i+4j}{25}$	B.	$\frac{3i-4j}{25}$
	C.	$\frac{3i+4j}{5}$	D.	$\frac{3i-4j}{5}$
49.	If $\vec{x} = (2,-1,4), \vec{y} = (1,1,-3)$ then $\vec{x} + \vec{y} = \underline{\hspace{2cm}}$			
	A.	$(-3,0,1)$	B.	$(3,0,1)$
	C.	$(-3,0,-1)$	D.	$(3,0,-1)$
૪૯.	જો $\vec{x} = (2,-1,4), \vec{y} = (1,1,-3)$ હોય તો $\vec{x} + \vec{y} = \underline{\hspace{2cm}}$			
	A.	$(-3,0,1)$	B.	$(3,0,1)$
	C.	$(-3,0,-1)$	D.	$(3,0,-1)$
50.	If $\vec{x} = (1,2,-4), \vec{y} = (4,1,-3)$ then $\vec{y} - \vec{x} = \underline{\hspace{2cm}}$			
	A.	$(3,-1,1)$	B.	$(3,-1,-1)$
	C.	$(3,-1,-7)$	D.	$(-3,-1,1)$
૫૦.	જો $\vec{x} = (1,2,-4), \vec{y} = (4,1,-3)$ હોય તો $\vec{y} - \vec{x} = \underline{\hspace{2cm}}$			
	A.	$(3,-1,1)$	B.	$(3,-1,-1)$
	C.	$(3,-1,-7)$	D.	$(-3,-1,1)$
51.	Direction cosine of vector $(-1,2,-2)$ is $\underline{\hspace{2cm}}$			
	A.	$\frac{1}{3}, \frac{2}{3}, \frac{2}{3}$	B.	$-\frac{1}{3}, -\frac{2}{3}, -\frac{2}{3}$
	C.	$-\frac{1}{3}, \frac{2}{3}, -\frac{2}{3}$	D.	$\frac{1}{5}, \frac{2}{5}, -\frac{2}{5}$
૫૧.	સદિશ $(-1,2,-2)$ ના દિશકોસાઈનો $\underline{\hspace{2cm}}$ છે.			
	A.	$\frac{1}{3}, \frac{2}{3}, \frac{2}{3}$	B.	$-\frac{1}{3}, -\frac{2}{3}, -\frac{2}{3}$
	C.	$-\frac{1}{3}, \frac{2}{3}, -\frac{2}{3}$	D.	$\frac{1}{5}, \frac{2}{5}, -\frac{2}{5}$
52.	If $\vec{a} = (1,3,-5), \vec{b} = (1,-1,-3)$ then $\vec{a} \cdot \vec{b} = \underline{\hspace{2cm}}$			
	A.	12	B.	0
	C.	13	D.	-1
૫૨.	જો $\vec{a} = (1,3,-5), \vec{b} = (1,-1,-3)$ હોય તો $\vec{a} \cdot \vec{b} = \underline{\hspace{2cm}}$			
	A.	12	B.	0

	C.	13	D.	-1
53.	If vectors $\vec{a}$ and $\vec{b}$ are parallel to each other then $\vec{a} \times \vec{b} =$ _____			
	A.	Unit vector	B.	1
	C.	Zero vector	D.	0
૫૩.	જો સદિશો $\vec{a}$ અને $\vec{b}$ પરસ્પર સમાંતર હોય તો $\vec{a} \times \vec{b} =$ _____			
	A.	એકમ સદિશ	B.	1
	C.	શૂન્ય સદિશ	D.	0
54.	_____ is perpendicular to $\vec{a}$ and $\vec{b}$ both.			
	A.	$\vec{a} \cdot \vec{b}$	B.	$\vec{a} - \vec{b}$
	C.	$\vec{a} \times \vec{b}$	D.	$\vec{a} + \vec{b}$
૫૪.	_____ એ $\vec{a}$ અને $\vec{b}$ બંન્નેને લંબ છે.			
	A.	$\vec{a} \cdot \vec{b}$	B.	$\vec{a} - \vec{b}$
	C.	$\vec{a} \times \vec{b}$	D.	$\vec{a} + \vec{b}$
55.	If $(1, a, -5) \cdot (0, 5, 3) = 0$ then $a =$ _____			
	A.	15	B.	3
	C.	0	D.	5
૫૫.	જો $(1, a, -5) \cdot (0, 5, 3) = 0$ હોય તો $a =$ _____			
	A.	15	B.	3
	C.	0	D.	5
56.	If θ is an angle between the vectors $\vec{x}$ and $\vec{y}$ then $\sin \theta =$ _____			
	A.	$\frac{ \vec{x} \times \vec{y} }{ \vec{x} \vec{y} }$	B.	$\frac{ \vec{x} + \vec{y} }{ \vec{x} \vec{y} }$
	C.	$\frac{\vec{x} \cdot \vec{y}}{ \vec{x} \vec{y} }$	D.	$\frac{ \vec{x} - \vec{y} }{ \vec{x} \vec{y} }$
૫૬.	જો સદિશો $\vec{x}$ અને $\vec{y}$ વચ્ચેનો ખૂણો θ હોય તો $\sin \theta =$ _____			
	A.	$\frac{ \vec{x} \times \vec{y} }{ \vec{x} \vec{y} }$	B.	$\frac{ \vec{x} + \vec{y} }{ \vec{x} \vec{y} }$
	C.	$\frac{\vec{x} \cdot \vec{y}}{ \vec{x} \vec{y} }$	D.	$\frac{ \vec{x} - \vec{y} }{ \vec{x} \vec{y} }$
57.	_____ is a unit vector.			
	A.	$i + j$	B.	$\cos\theta i + \sin\theta j$
	C.	$i - j$	D.	$0i + 0j$
૫૭.	_____ એ એકમ સદિશ છે.			
	A.	$i + j$	B.	$\cos\theta i + \sin\theta j$
	C.	$i - j$	D.	$0i + 0j$
58.	$(-2, 1, 3) \times (3, -1, 2) =$ _____			
	A.	$(-5, 13, -1)$	B.	$(5, 13, 1)$
	C.	$(5, -13, -1)$	D.	$(5, 13, -1)$
૫૮.	$(-2, 1, 3) \times (3, -1, 2) =$ _____			
	A.	$(-5, 13, -1)$	B.	$(5, 13, 1)$
	C.	$(5, -13, -1)$	D.	$(5, 13, -1)$
59.	_____ is not unit vector.			
	A.	$(1, 1, 1)$	B.	$(-1, 0, 0)$
	C.	$(0, 0, 1)$	D.	$(0, 1, 0)$
૫૯.	_____ એ સદિશ એકમ નથી.			
	A.	$(1, 1, 1)$	B.	$(-1, 0, 0)$
	C.	$(0, 0, 1)$	D.	$(0, 1, 0)$
60.	If displacement of a particle is $(-1, 2, 5)$ under the total force $(-1, 3, 6)$ then the work done will be _____.			
	A.	35	B.	0
	C.	37	D.	30

૬૦.	જો કોઈ કણ પર કુલ બળ $(-1,3,6)$ લાગવાથી તેનું સ્થાનાંતર $(-1,2,5)$ થતું હોય તો કાર્ય _____ થશે.			
	A.	35	B.	0
	C.	37	D.	30
61.	Volume of sphere of radius $r =$ _____			
	A.	$\frac{2}{3}\pi r^3$	B.	$\frac{4}{3}\pi r^3$
	C.	$2\pi r^2$	D.	$4\pi r^2$
૬૧.	r ત્રિજ્યા વાળા ગોલકનું ઘનફળ=_____			
	A.	$\frac{2}{3}\pi r^3$	B.	$\frac{4}{3}\pi r^3$
	C.	$2\pi r^2$	D.	$4\pi r^2$
62.	Surface area of cylinder = _____			
	A.	$2\pi r h$	B.	$\pi r^2 h$
	C.	$2\pi r^2 h$	D.	$\pi r h$
૬૨.	નળાકારની વક્ર સપાટીનું ક્ષેત્રફળ=_____			
	A.	$2\pi r h$	B.	$\pi r^2 h$
	C.	$2\pi r^2 h$	D.	$\pi r h$
63.	Radius and height of a cone is 4cm and 15cm respectively then Volume = _____			
	A.	40π	B.	60π
	C.	80π	D.	85π
૬૩.	શંકુની ત્રિજ્યા અને ઊંચાઈ અનુક્રમે 4cm અને 15cm હોય તો તેનું ઘનફળ=_____			
	A.	40π	B.	60π
	C.	80π	D.	85π
64.	Surface area of a cuboid is _____.			
	A.	lbh	B.	$l+b+h$
	C.	$lb+bh+lh$	D.	$2(lb+bh+lh)$
૬૪.	લંબઘનની વક્રસપાટીનું ક્ષેત્રફળ=_____.			
	A.	lbh	B.	$l+b+h$
	C.	$lb+bh+lh$	D.	$2(lb+bh+lh)$
65.	Area of square having perimeter 40cm is _____ cm^2 .			
	A.	1600	B.	100
	C.	20	D.	10
૬૫.	પરિમિતિ 40cm હોય તેવા ચોરસનું ક્ષેત્રફળ _____ cm^2 થાય.			
	A.	1600	B.	100
	C.	20	D.	10
66.	Area of a circle having radius 4cm is _____.			
	A.	8π	B.	16π
	C.	2π	D.	4π
૬૬.	4cm ત્રિજ્યા વાળા વર્તુળનું ક્ષેત્રફળ _____ થશે.			
	A.	8π	B.	16π
	C.	2π	D.	4π
67.	$1 m^2 =$ _____ cm^2			
	A.	10000	B.	1000
	C.	100	D.	10
૬૭.	$1 m^2 =$ _____ cm^2			
	A.	10000	B.	1000
	C.	100	D.	10
68.	Area of rectangle having length 250cm and breadth 80cm is _____ m^2 .			
	A.	20000	B.	200
	C.	2	D.	20
૬૮.	250cm લંબાઈ અને 80cm પહોળાઈ વાળા લંબચોરસનું ક્ષેત્રફળ _____ m^2 થશે.			

	A.	20000	B.	200
	C.	2	D.	20
69.	If a circle is made from 10π cm long wire then area of circle is _____.			
	A.	100π	B.	25π
	C.	10π	D.	5π
૬૯.	જો 10π cm લાંબા તારથી વર્તુળ બનાવવામાં આવે તો તે વર્તુળનું ક્ષેત્રફળ _____ થાય.			
	A.	100π	B.	25π
	C.	10π	D.	5π
70.	Base and altitude of a triangle is 12cm and 5cm. The area of triangle is _____ cm^2			
	A.	60	B.	120
	C.	90	D.	30
૭૦.	ત્રિકોણના પાયા તથા કર્ણની લંબાઈ 12cm અને 5cm હોય તો ત્રિકોણનું ક્ષેત્રફળ _____.			
	A.	60	B.	120
	C.	90	D.	30
