

GUJARAT TECHNOLOGICAL UNIVERSITY
Diploma Engineering – SEMESTER – 1(CtoD) – EXAMINATION – Winter-2025

Subject Code: C4300001

Date: 02-02-2026

Subject Name: Mathematics

Time: 10:30 AM TO 12:00 PM

Total Marks: 70

Instructions:

1. Attempt all questions.
2. Make Suitable assumptions wherever necessary.
3. Use of simple calculators and non-programmable scientific calculators are permitted.
4. English version is authentic.
5. English version is authentic.
6. Use only OMR to answer this question paper.
7. There is No negative marking.

No. Question Text and Option. પ્રશ્ન અને વિકલ્પો.

1. $\begin{vmatrix} 5 & 8 \\ 7 & 4 \end{vmatrix}$
A. 36 B. -36
C. 76 D. -76
૧. $\begin{vmatrix} 5 & 8 \\ 7 & 4 \end{vmatrix}$
A. 36 B. -36
C. 76 D. -76
2. If $\begin{vmatrix} 3x & 3 \\ 3 & 1 \end{vmatrix} = 0$ then $x =$ ____
A. $\frac{1}{3}$ B. $-\frac{1}{3}$
C. 3 D. -3
૨. જો $\begin{vmatrix} 3x & 3 \\ 3 & 1 \end{vmatrix} = 0$ તો $x =$ ____
A. $\frac{1}{3}$ B. $-\frac{1}{3}$
C. 3 D. -3
3. $\log_3 81 =$ ____
A. 4 B. 0
C. 1 D. 9
૩. $\log_3 81 =$ ____
A. 4 B. 0
C. 1 D. 9
4. $5^{\log_5 2}$
A. 5 B. 1
C. 25 D. 2
૪. $5^{\log_5 2}$
A. 5 B. 1
C. 25 D. 2
5. $\log 5 + \log 3 =$ ____
A. $\log 15$ B. $\log_3 \frac{5}{3}$
C. $\log 2$ D. $\log \frac{3}{5}$
 $\log 5 + \log 3 =$ ____

૫. A. $\log 15$ B. $\log_3 \frac{5}{3}$
C. $\log 2$ D. $\log \frac{3}{5}$
6. $\log 1 \cdot \log 2 \cdot \log 3 \cdot \log 4 = \underline{\hspace{2cm}}$
A. 0 B. 24
C. 1 D. 12
૬. $\log 1 \cdot \log 2 \cdot \log 3 \cdot \log 4 = \underline{\hspace{2cm}}$
A. 0 B. 24
C. 1 D. 12
7. $\begin{vmatrix} 3 & 4 \\ -1 & 2 \end{vmatrix} \times \begin{vmatrix} 2 & -3 \\ 1 & 5 \end{vmatrix} = \underline{\hspace{2cm}}$
A. 14 B. 70
C. 130 D. 26
૭. $\begin{vmatrix} 3 & 4 \\ -1 & 2 \end{vmatrix} \times \begin{vmatrix} 2 & -3 \\ 1 & 5 \end{vmatrix} = \underline{\hspace{2cm}}$
A. 14 B. 70
C. 130 D. 26
8. If $f(x) = \log(e^x)$ then $f(0) = \underline{\hspace{2cm}}$
A. 2 B. 1
C. 0 D. None of these
૮. જો $f(x) = \log(e^x)$ તો $f(0) = \underline{\hspace{2cm}}$
A. 2 B. 1
C. 0 D. આમાંથી એક પણ નહિ
9. $\log_{\sqrt{3}} 3 \times \log_3 \sqrt{3} = \underline{\hspace{2cm}}$
A. 1 B. 0
C. 9 D. $\sqrt{3}$
૯. $\log_{\sqrt{3}} 3 \times \log_3 \sqrt{3} = \underline{\hspace{2cm}}$
A. 1 B. 0
C. 9 D. $\sqrt{3}$
10. If $f(x) = x^2 + 2$ then $f(2) = \underline{\hspace{2cm}}$
A. 6 B. 0
C. 3 D. 1
૧૦. જો $f(x) = x^2 + 2$ તો $f(2) = \underline{\hspace{2cm}}$
A. 6 B. 0
C. 3 D. 1
11. $\log_x x = \underline{\hspace{2cm}}$
A. x^2 B. 0
C. x D. 1
૧૧. $\log_x x = \underline{\hspace{2cm}}$
A. x^2 B. 0
C. x D. 1
12. $\log_n m^4 \times \log_m n^2 = \underline{\hspace{2cm}}$
A. 8 B. 2
C. 4 D. 1
૧૨. $\log_n m^4 \times \log_m n^2 = \underline{\hspace{2cm}}$
A. 8 B. 2
C. 4 D. 1
13. If $\begin{vmatrix} 3x & -3y \\ -1 & 1 \end{vmatrix} = 6$ then $x - y = \underline{\hspace{2cm}}$
A. 6 B. -2
C. 2 D. 3
૧૩. જો $\begin{vmatrix} 3x & -3y \\ -1 & 1 \end{vmatrix} = 6$ તો $x - y = \underline{\hspace{2cm}}$
A. 6 B. -2
C. 2 D. 3

14. If $f(x) = \cos x$ then $f\left(\frac{\pi}{2} - x\right) = \underline{\hspace{2cm}}$
 A. $\sin x$ B. $\cos x$
 C. $-\sin x$ D. $-\cos x$
15. If $f(x) = \cos x$ then $f\left(\frac{\pi}{2} - x\right) = \underline{\hspace{2cm}}$
 A. $\sin x$ B. $\cos x$
 C. $-\sin x$ D. $-\cos x$
16. If $f(x) = \frac{1}{1+x}$ then $f\left(\frac{1}{x}\right) = \underline{\hspace{2cm}}$
 A. $\frac{1+x}{x}$ B. $\frac{x}{1+x}$
 C. x D. 1
17. If $f(x) = \frac{1}{1+x}$ then $f\left(\frac{1}{x}\right) = \underline{\hspace{2cm}}$
 A. $\frac{1+x}{x}$ B. $\frac{x}{1+x}$
 C. x D. 1
18. $\log_3(\log_2 8) = \underline{\hspace{2cm}}$
 A. 3 B. 0
 C. 1 D. $\log_3 2$
19. $\log_3(\log_2 8) = \underline{\hspace{2cm}}$
 A. 3 B. 0
 C. 1 D. $\log_3 2$
20. $150^\circ = \underline{\hspace{2cm}} \text{ Radian}$
 A. $\frac{6\pi}{5}$ B. $\frac{\pi}{9}$
 C. $\frac{\pi}{5}$ D. $\frac{5\pi}{6}$
21. $150^\circ = \underline{\hspace{2cm}} \text{ Radian}$
 A. $\frac{6\pi}{5}$ B. $\frac{\pi}{9}$
 C. $\frac{\pi}{5}$ D. $\frac{5\pi}{6}$
22. $\pi \text{ Radian} = \underline{\hspace{2cm}} \text{ Degree}$
 A. 90 B. 45
 C. 180 D. 60
23. $\pi \text{ Radian} = \underline{\hspace{2cm}} \text{ Degree}$
 A. 90 B. 45
 C. 180 D. 60
24. $\cos 90^\circ \times \cos 60^\circ \times \sin 30^\circ = \underline{\hspace{2cm}}$
 A. $\frac{1}{2}$ B. 0
 C. $\frac{\sqrt{3}}{2}$ D. 1
25. $\cos 90^\circ \times \cos 60^\circ \times \sin 30^\circ = \underline{\hspace{2cm}}$
 A. $\frac{1}{2}$ B. 0
 C. $\frac{\sqrt{3}}{2}$ D. 1
26. $\tan^{-1} \frac{3}{4} + \tan^{-1} \frac{4}{3} = \underline{\hspace{2cm}}$
 A. $\frac{\pi}{2}$ B. π
 C. 0 D. 1

૨૦. $\tan^{-1}\frac{3}{4} + \tan^{-1}\frac{4}{3} = \underline{\hspace{2cm}}$
 A. $\frac{\pi}{2}$ B. π
 C. 0 D. 1
21. Principal Period of $\sin 2x$ is ____
 A. π B. 2π
 C. 3π D. $\frac{\pi}{2}$
૨૧. વિધેય $\sin 2x$ નું મુખ્ય આવર્તમાન _____ છે
 A. π B. 2π
 C. 3π D. $\frac{\pi}{2}$
22. $\cos(\pi + \theta) = \underline{\hspace{2cm}}$
 A. $\sin \theta$ B. $-\sin \theta$
 C. $-\cos \theta$ D. $\cos \theta$
૨૨. $\cos(\pi + \theta) = \underline{\hspace{2cm}}$
 A. $\sin \theta$ B. $-\sin \theta$
 C. $-\cos \theta$ D. $\cos \theta$
23. $\tan 225^\circ = \underline{\hspace{2cm}}$
 A. 0 B. 1
 C. $\frac{1}{\sqrt{2}}$ D. -1
૨૩. $\tan 225^\circ = \underline{\hspace{2cm}}$
 A. 0 B. 1
 C. $\frac{1}{\sqrt{2}}$ D. -1
24. $\cos^2 \theta + \sin^2 \theta = \underline{\hspace{2cm}}$
 A. 1 B. 0
 C. -1 D. 2
૨૪. $\cos^2 \theta + \sin^2 \theta = \underline{\hspace{2cm}}$
 A. 1 B. 0
 C. -1 D. 2
25. If $\sin \theta + \cos \theta = 2$ then $\sin(2\theta) = \underline{\hspace{2cm}}$
 A. 1 B. 0
 C. 2 D. 3
૨૫. જો $\sin \theta + \cos \theta = 2$ તો $\sin(2\theta) = \underline{\hspace{2cm}}$
 A. 1 B. 0
 C. 2 D. 3
26. Principal Period of $f(x) = \tan\left(\frac{2x}{3} + 5\right)$ is ____
 A. 3π B. 2π
 C. $\frac{3\pi}{2}$ D. $\frac{2\pi}{3}$
૨૬. વિધેય $f(x) = \tan\left(\frac{2x}{3} + 5\right)$ નું મુખ્ય આવર્તમાન _____ છે
 A. 3π B. 2π
 C. $\frac{3\pi}{2}$ D. $\frac{2\pi}{3}$
27. $\sec^{-1}x + \operatorname{cosec}^{-1}x = \underline{\hspace{2cm}}$ $|x| \geq 1$
 A. π B. $\frac{\pi}{2}$
 C. 0 D. None Of these
૨૭. $\sec^{-1}x + \operatorname{cosec}^{-1}x = \underline{\hspace{2cm}}$ $|x| \geq 1$
 A. π B. $\frac{\pi}{2}$
 C. 0 D. આમાંથી એક પણ નહિ
28. $\cos\left(\cos^{-1}\frac{3}{2}\right) = \underline{\hspace{2cm}}$

- A. $\frac{3}{2}$
C. $\frac{2}{3}$
28. $\cos\left(\cos^{-1}\frac{3}{2}\right) = \underline{\hspace{2cm}}$
A. $\frac{3}{2}$
C. $\frac{2}{3}$
29. $\tan^{-1}(\sqrt{3}) = \underline{\hspace{2cm}}$
A. 30°
C. 60°
30. $\tan^{-1}(\sqrt{3}) = \underline{\hspace{2cm}}$
A. 30°
C. 60°
30. $\cos 2\alpha = \underline{\hspace{2cm}}$
A. $2 \sin\alpha \cos\alpha$
C. $2 \tan^2\alpha - 1$
31. $\cos 2\alpha = \underline{\hspace{2cm}}$
A. $2 \sin\alpha \cos\alpha$
C. $2 \tan^2\alpha - 1$
31. $|3i - 4j + 5k| = \underline{\hspace{2cm}}$
A. $5\sqrt{2}$
C. $3\sqrt{2}$
32. $|3i - 4j + 5k| = \underline{\hspace{2cm}}$
A. $5\sqrt{2}$
C. $3\sqrt{2}$
32. If $\bar{x} = (2,2)$ and $\bar{y} = (1,3)$ then $2\bar{x} + 3\bar{y} = \underline{\hspace{2cm}}$
A. 20
C. -6
33. If $\bar{x} = (2,2)$ and $\bar{y} = (1,3)$ then $2\bar{x} + 3\bar{y} = \underline{\hspace{2cm}}$
A. 20
C. -6
33. If $\bar{x} = (3,2,1)$ and $\bar{y} = (1,2,3)$ then $\bar{x} \cdot \bar{y} = \underline{\hspace{2cm}}$
A. -4
C. 9
34. If $\bar{x} = (3,2,1)$ and $\bar{y} = (1,2,3)$ then $\bar{x} \cdot \bar{y} = \underline{\hspace{2cm}}$
A. -4
C. 9
34. If $\bar{x} \times \bar{y} = (1, -2, -5)$ then $\bar{y} \times \bar{x} = \underline{\hspace{2cm}}$
A. $(1,2,5)$
C. $(-1, -2, -5)$
35. If $\bar{x} \times \bar{y} = (1, -2, -5)$ then $\bar{y} \times \bar{x} = \underline{\hspace{2cm}}$
A. $(1,2,5)$
C. $(-1, -2, -5)$
35. If $\bar{x} \perp \bar{y}$ then $\bar{x} \cdot \bar{y} = \underline{\hspace{2cm}}$
A. 0
C. 1
36. If $\bar{x} \perp \bar{y}$ then $\bar{x} \cdot \bar{y} = \underline{\hspace{2cm}}$
A. 0
C. 1
36. $\bar{j} \times \bar{k} = \underline{\hspace{2cm}}$
A. $-\bar{k}$
C. $\bar{k}$
- B. 1
D. 0
- B. 1
D. 0
- B. 90°
D. 45°
- B. 90°
D. 45°
- B. $1 - 2\tan^2\alpha$
D. $\cos^2\alpha - \sin^2\alpha$
- B. $1 - 2\tan^2\alpha$
D. $\cos^2\alpha - \sin^2\alpha$
- B. 50
D. 25
- B. 50
D. 25
- B. $(13,7)$
D. $(7,13)$
- B. $(13,7)$
D. $(7,13)$
- B. 3
D. 10
- B. 3
D. 10
- B. $(-1, -2, 5)$
D. $(-1, 2, 5)$
- B. $(-1, -2, 5)$
D. $(-1, 2, 5)$
- B. -1
D. None of these
- B. -1
D. આમાંથી એક પણ નહિ
- B. $-\bar{i}$
D. $\bar{i}$

36. $\bar{j} \times \bar{k} =$ _____
 A. $-\bar{k}$ B. $-\bar{i}$
 C. $\bar{k}$ D. $\bar{i}$
37. $\bar{i} \cdot \bar{j} =$ _____
 A. 1 B. 0
 C. $\bar{k}$ D. $-\bar{k}$
38. $\bar{i} \cdot \bar{j} =$ _____
 A. 1 B. 0
 C. $\bar{k}$ D. $-\bar{k}$
39. $\bar{k} \cdot \bar{k} =$ _____
 A. 1 B. 0
 C. $\bar{j}$ D. $-\bar{k}$
36. $\bar{k} \cdot \bar{k} =$ _____
 A. 1 B. 0
 C. $\bar{j}$ D. $-\bar{k}$
39. If α is the angle between two vectors $\bar{x}$ and $\bar{y}$ then $\cos \alpha =$ _____
 A. $\frac{|\bar{x} \times \bar{y}|}{|\bar{x}||\bar{y}|}$ B. $\frac{|\bar{x} \times \bar{y}|}{|\bar{x}||\bar{y}|}$
 C. $\frac{\bar{x} \cdot \bar{y}}{|\bar{x}||\bar{y}|}$ D. $\frac{\bar{x} \times \bar{y}}{|\bar{x}||\bar{y}|}$
36. જો બે સદીશો $\bar{x}$ અને $\bar{y}$ વચ્ચેનો ખૂણો α હોય તો $\cos \alpha =$ _____
 A. $\frac{|\bar{x} \times \bar{y}|}{|\bar{x}||\bar{y}|}$ B. $\frac{|\bar{x} \times \bar{y}|}{|\bar{x}||\bar{y}|}$
 C. $\frac{\bar{x} \cdot \bar{y}}{|\bar{x}||\bar{y}|}$ D. $\frac{\bar{x} \times \bar{y}}{|\bar{x}||\bar{y}|}$
40. Force $\bar{F} = 4\bar{i}$ is acted on a body whose displacement vector is $2\bar{i} + 3\bar{j} - 8\bar{k}$, then the work done is _____
 A. 8 B. 13
 C. -8 D. -13
- જો એક પદાર્થ પર બળ $\bar{F} = 4\bar{i}$ લાગતા તેનું સ્થાનાંતર $2\bar{i} + 3\bar{j} - 8\bar{k}$ થાય છે તો થયેલ કાર્ય _____ છે.
 A. 8 B. 13
 C. -8 D. -13
41. Unit vector in the direction of $\bar{x}$ is _____
 A. $\bar{x}$ B. $\frac{\bar{x} \cdot |\bar{x}|}{|\bar{x}|}$
 C. $2\bar{x}$ D. $\frac{\bar{x}}{|\bar{x}|}$
- જો સદીશ $\bar{x}$ ની દિશામાનો એકમ સદીશ = _____
 A. $\bar{x}$ B. $\frac{\bar{x} \cdot |\bar{x}|}{|\bar{x}|}$
 C. $2\bar{x}$ D. $\frac{\bar{x}}{|\bar{x}|}$
42. If $\bar{x} = (1,2,0)$ and $\bar{y} = (1,0,3)$ then $\bar{x} \times \bar{y} =$ _____
 A. $(-6, -3, -2)$ B. $(6, -3, -2)$
 C. $(6, 3, 2)$ D. $(6, 3, -2)$
- જો $\bar{x} = (1,2,0)$ અને $\bar{y} = (1,0,3)$ તો $\bar{x} \times \bar{y} =$ _____
 A. $(-6, -3, -2)$ B. $(6, -3, -2)$
 C. $(6, 3, 2)$ D. $(6, 3, -2)$
43. $\bar{x} \times \bar{x} =$ _____
 A. $\bar{0}$ (Zero Vector) B. -1
 C. 1 D. None Of these
 $\bar{x} \times \bar{x} =$ _____

૪૩. A. $\bar{0}$ (શૂન્ય સદિશ) B. -1
C. 1 D. None Of these
44. If $\bar{x} = (4,3)$ and $\bar{y} = (1,2)$ then $|3\bar{x} - \bar{y}| = \underline{\hspace{2cm}}$
A. $\sqrt{170}$ B. $\sqrt{10}$
C. $\sqrt{124}$ D. $\sqrt{52}$
૪૪. જો $\bar{x} = (4,3)$ અને $\bar{y} = (1,2)$ તો $|3\bar{x} - \bar{y}| = \underline{\hspace{2cm}}$
A. $\sqrt{170}$ B. $\sqrt{10}$
C. $\sqrt{124}$ D. $\sqrt{52}$
45. For Line $ax + by + c = 0, a^2 + b^2 \neq 0$ X - Intercept = ____
A. $-\frac{c}{a}$ B. $-\frac{c}{b}$
C. $-\frac{a}{b}$ D. $\frac{c}{b}$
૪૫. રેખા $ax + by + c = 0, a^2 + b^2 \neq 0$ માટે X - અંતઃખંડ = ____
A. $-\frac{c}{a}$ B. $-\frac{c}{b}$
C. $-\frac{a}{b}$ D. $\frac{c}{b}$
46. For Line $ax + by + c = 0, a^2 + b^2 \neq 0$, Slope = ____
A. $-\frac{c}{a}$ B. $-\frac{c}{b}$
C. $-\frac{a}{b}$ D. $\frac{c}{b}$
૪૬. રેખા $ax + by + c = 0, a^2 + b^2 \neq 0$ માટે ઢાળ = ____
A. $-\frac{c}{a}$ B. $-\frac{c}{b}$
C. $-\frac{a}{b}$ D. $\frac{c}{b}$
47. For Line $2x + 3y - 1 = 0, a^2 + b^2 \neq 0$, Y - Intercept = ____
A. $\frac{1}{3}$ B. $\frac{1}{2}$
C. $-\frac{2}{3}$ D. $\frac{2}{3}$
૪૭. રેખા $2x + 3y - 1 = 0, a^2 + b^2 \neq 0$ માટે Y - અંતઃખંડ = ____
A. $\frac{1}{3}$ B. $\frac{1}{2}$
C. $-\frac{2}{3}$ D. $\frac{2}{3}$
48. The Cartesian equation of the line passing through the points (2,0) and (0,3) is
A. $3x - 2y + 6 = 0$ B. $-3x + 2y - 6 = 0$
C. $3x + 2y - 6 = 0$ D. $3x + 2y + 6 = 0$
૪૮. બિંદુઓ (2,0) અને (0,3) માંથી પસાર થતી રેખાનું કાર્તેઝીય સમીકરણ _____ છે.
A. $3x - 2y + 6 = 0$ B. $-3x + 2y - 6 = 0$
C. $3x + 2y - 6 = 0$ D. $3x + 2y + 6 = 0$
49. The slope of a line passing through the points (8,5) and (1,-2) is ____
A. 1 B. $\frac{3}{7}$
C. -1 D. $-\frac{3}{7}$
૪૯. બિંદુઓ (8,5) અને (1,-2) માંથી પસાર થતી રેખાનો ઢાળ _____ છે.
A. 1 B. $\frac{3}{7}$
C. -1 D. $-\frac{3}{7}$
50. If two lines having slopes m_1 and m_2 are parallel to each other then _____

- A. $m_1 = m_2$ B. $m_1 \cdot m_2 = 1$
 C. $m_1 = m_2 - 1$ D. $m_1 \cdot m_2 = -1$
૫૦. m_1 અને m_2 ઢાળ ધરાવતી બે રેખાઓ પરસ્પર સમાંતર હોય તો _____
 A. $m_1 = m_2$ B. $m_1 \cdot m_2 = 1$
 C. $m_1 = m_2 - 1$ D. $m_1 \cdot m_2 = -1$
51. Centre of the circle $(x - 3)^2 + (y - 4)^2 = 16$ is _____
 A. (3,-4) B. (-3,-4)
 C. (3,4) D. (-3,4)
૫૧. વર્તુળ $(x - 3)^2 + (y - 4)^2 = 16$ નું કેન્દ્ર _____ છે
 A. (3,-4) B. (-3,-4)
 C. (3,4) D. (-3,4)
52. Radius of the circle $(x - 5)^2 + (y - 1)^2 = 49$ is _____
 A. 7 B. 5
 C. 4 D. 1
૫૨. વર્તુળ $(x - 5)^2 + (y - 1)^2 = 49$ ની ત્રિજ્યા _____ છે.
 A. 7 B. 5
 C. 4 D. 1
53. Centre of the circle $x^2 + y^2 - 2x + 4y + 1 = 0$ is _____
 A. (-1,2) B. (1,-2)
 C. (1,2) D. (-1,-2)
૫૩. વર્તુળ $x^2 + y^2 - 2x + 4y + 1 = 0$ નું કેન્દ્ર _____ છે
 A. (-1,2) B. (1,-2)
 C. (1,2) D. (-1,-2)
54. Radius of the circle $x^2 + y^2 - 2x + 4y + 1 = 0$ is _____
 A. 9 B. 8
 C. 2 D. 4
૫૪. વર્તુળ $x^2 + y^2 - 2x + 4y + 1 = 0$ ની ત્રિજ્યા _____ છે
 A. 9 B. 8
 C. 2 D. 4
55. If A(2,4) and B(6,6) then midpoint of line segment $\overline{AB}$ is _____
 A. (2,-1) B. (-2,1)
 C. (-4,-5) D. (4,5)
૫૫. જો A(2,4) અને B(6,6) હોય તો રેખાખંડ $\overline{AB}$ નું મધ્યબિંદુ _____ છે.
 A. (2,-1) B. (-2,1)
 C. (-4,-5) D. (4,5)
56. Slope of a line making an angle 30° with positive direction of X-axis is _____
 A. $\sqrt{3}$ B. $\frac{1}{\sqrt{3}}$
 C. 1 D. $\frac{1}{2}$
૫૬. X – અક્ષની ધન દિશા સાથે 30° નો ખૂણો બનાવતી રેખાનો ઢાળ _____
 A. $\sqrt{3}$ B. $\frac{1}{\sqrt{3}}$
 C. 1 D. $\frac{1}{2}$
57. If two lines $x + 2y - 8 = 0$ and $kx - y - 1 = 0$ are perpendicular then $k =$ _____
 A. -2 B. $\frac{1}{2}$
 C. 2 D. 4
૫૭. જો બે રેખાઓ $x + 2y - 8 = 0$ અને $kx - y - 1 = 0$ પરસ્પર લંબ હોય તો $k =$ _____
 A. -2 B. $\frac{1}{2}$
 C. 2 D. 4

58. Distance between two points (1,1) and (1,-1) is _____
 A. 4 B. $\sqrt{2}$
 C. $2\sqrt{2}$ D. 2
૫૮. બે બિંદુઓ (1,1) અને (1,-1) વચ્ચેનું અંતર = _____
 A. 4 B. $\sqrt{2}$
 C. $2\sqrt{2}$ D. 2
59. $\lim_{x \rightarrow 0} \left(\frac{\tan^{-1} x}{x} \right) = \text{_____}$
 A. 1 B. 0
 C. -1 D. 2
૫૯. $\lim_{x \rightarrow 0} \left(\frac{\tan^{-1} x}{x} \right) = \text{_____}$
 A. 1 B. 0
 C. -1 D. 2
60. $\lim_{x \rightarrow 1} (2x^2 - 3x + 1) = \text{_____}$
 A. 3 B. 0
 C. -2 D. 1
૬૦. $\lim_{x \rightarrow 1} (2x^2 - 3x + 1) = \text{_____}$
 A. 3 B. 0
 C. -2 D. 1
61. $\lim_{x \rightarrow a} \frac{x^n - a^n}{x - a} = \text{_____}$
 A. a^{n-1} B. $\log_e a$
 C. na^{n-1} D. 1
૬૧. $\lim_{x \rightarrow a} \frac{x^n - a^n}{x - a} = \text{_____}$
 A. a^{n-1} B. $\log_e a$
 C. na^{n-1} D. 1
62. $\lim_{x \rightarrow 0} \frac{7^x - 1}{x} = \text{_____}$
 A. $\log_e 7$ B. 1
 C. $\log_7 e$ D. 0
૬૨. $\lim_{x \rightarrow 0} \frac{7^x - 1}{x} = \text{_____}$
 A. $\log_e 7$ B. 1
 C. $\log_7 e$ D. 0
63. $\lim_{x \rightarrow 0} \frac{\sin 2x}{x} = \text{_____}$
 A. 2 B. 1
 C. 0 D. -1
૬૩. $\lim_{x \rightarrow 0} \frac{\sin 2x}{x} = \text{_____}$
 A. 2 B. 1
 C. 0 D. -1
64. $\lim_{x \rightarrow \frac{\pi}{4}} \tan x = \text{_____}$
 A. -1 B. 0
 C. 1 D. 2
૬૪. $\lim_{x \rightarrow \frac{\pi}{4}} \tan x = \text{_____}$
 A. -1 B. 0
 C. 1 D. 2
65. $\lim_{n \rightarrow \infty} \frac{10n^2 - 4n - 7}{2n^2} = \text{_____}$

- A. 0
 C. 3
 65. $\lim_{n \rightarrow \infty} \frac{10n^2 - 4n - 7}{2n^2} = \underline{\hspace{1cm}}$
 A. 0
 C. 3
 66. $\lim_{n \rightarrow \infty} \left(1 + \frac{1}{n}\right)^n = \underline{\hspace{1cm}}$
 A. e^2
 C. e
 67. $\lim_{x \rightarrow 2} \frac{x^3 - 8}{x - 2} = \underline{\hspace{1cm}}$
 A. 2
 C. 4
 68. $\lim_{n \rightarrow \infty} \frac{1}{n^2} = \underline{\hspace{1cm}}$
 A. ∞
 C. -1
 69. $\lim_{x \rightarrow 4} \sqrt{x^2 + 4} = \underline{\hspace{1cm}}$
 A. $2\sqrt{5}$
 C. $5\sqrt{2}$
 70. $\lim_{x \rightarrow 0} \left(1 + \frac{x}{2}\right)^{\frac{2}{x}} = \underline{\hspace{1cm}}$
 A. e^2
 C. e
 71. $\lim_{x \rightarrow 0} \left(1 + \frac{x}{2}\right)^{\frac{2}{x}} = \underline{\hspace{1cm}}$
 A. e^2
 C. e
- B. 5
 D. 2
 B. 5
 D. 2
 B. e^3
 D. 1
 B. e^3
 D. 1
 B. 8
 D. 12
 B. 8
 D. 12
 B. 0
 D. 1
 B. 0
 D. 1
 B. 10
 D. $2\sqrt{3}$
 B. 10
 D. $2\sqrt{3}$
 B. e^3
 D. 1
 B. e^3
 D. 1