Seat No. / Enrolment No.:

GUJARAT TECHNOLOGICAL UNIVERSITY

Diploma Engineering – SEMESTER – 1(CtoD) New – EXAMINATION – Winter-2024

Subject Code: C4300001 **Date: 03-01-2025**

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. **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. Value of $D=\begin{vmatrix}1 & 4 & 7\\0 & 0 & 0\\2 & 3 & 5\end{vmatrix}$ is____ .

A. 1 B. -1
C. 0 D. 5

૧. $D=\begin{vmatrix}1 & 4 & 7\\0 & 0 & 0\\2 & 3 & 5\end{vmatrix}$ ની કિમત_____ છે.

A. 1 B. -1
C. 0 D. 5

2. If $\begin{vmatrix}2 & 4\\-3 & x\end{vmatrix}=10$ then x=___

A. -1 B. 1
C. -11 D. 11

૨. જો $\begin{vmatrix}2 & 4\\-3 & x\end{vmatrix}=10$ હોય તો x=___

A. -1 B. 1
C. -11 D. 11

3. If $f(x)=x^3-3$ then $f(2)$=____

A. 1 B. 9
C. 3 D. 5

૩. જો $f(x)=x^3-3$ હોય તો $f(2)$=____

A. 1 B. 9
C. 3 D. 5

4. If $f(x)=\frac{2x+3}{x}$ then $f(-3)+f(3)$=____

A. 4 B. 3
C. 6 D. 1

૪. જો $f(x)=\frac{2x+3}{x}$ હોય તો $f(-3)+f(3)$=____

A. 4 B. 3
C. 6 D. 1

5. $\log_2\left(\frac{1}{8}\right)$=____

A. -3 B. 3
C. -4 D. 4

૫. $\log_2\left(\frac{1}{8}\right)$=____

A. -3 B. 3
C. -4 D. 4

6. $\log_k t = h$ then

A. $t^h = k$ B. $k^h = t$
C. $k^t = h$ D. $h^t = k$

૬. $\log_k t = h$ તો

A. $t^h = k$ B. $k^h = t$
C. $k^t = h$ D. $h^t = k$

7. $\log_4 1$=____

A. 4 B. 1
C. 0 D. -4

૭. $\log_4 1$=____

A. 4 B. 1
C. 0 D. -4

8. $\text{Sin}150^0$=____

A. $1/2$ B. $\sqrt{3}/2$
C. 0 D. 1

૮. $\text{Sin}150^0$=____

A. $1/2$ B. $\sqrt{3}/2$
C. 0 D. 1

9. $\sqrt{2+2\cos 4x}$=___

A. 2cos2x B. cos2x
C. 2cosx D. 4cosx

૯. $\sqrt{2+2\cos 4x}$=___

A. 2cos2x B. cos2x
C. 2cosx D. 4cosx

10. $\cot^{-1}\left(\tan\frac{\pi}{4}\right)$ =_____

A. 1 B. 0
C. $\frac{\pi}{4}$ D. None of above

૧૦. $\cot^{-1}\left(\tan\frac{\pi}{4}\right)$ =_____

A. 1 B. 0
C. $\frac{\pi}{4}$ D. ઉપરના માંથી એક પણ નહિ

11. $\sin^{-1}\frac{3}{4}+\cos^{-1}\frac{3}{4}$ =_____

A. 1 B. π
C. $\frac{\pi}{4}$ D. $\frac{\pi}{2}$

૧૧. $\sin^{-1}\frac{3}{4}+\cos^{-1}\frac{3}{4}$ =_____

A. 1 B. π
C. $\frac{\pi}{4}$ D. $\frac{\pi}{2}$

12. $\log_2 1 \times \log_3 2 \times \log_4 3 =$

A. 4 B. 0
C. $1/4$ D. 1

૧૨. $\log_2 1 \times \log_3 2 \times \log_4 3 =$

A. 4 B. 0
C. $1/4$ D. 1

13. $\log 25 \div \log 5 =$

A. 0.2 B. 5
C. 2 D. log5

૧૩. $\log 25 \div \log 5 =$

A. 0.2 B. 5
C. 2 D. log5

14. $\frac{1}{\log_4 12} + \frac{1}{\log_3 12} =$

A. 12 B. 4
C. 3 D. 1

૧૪. $\frac{1}{\log_4 12} + \frac{1}{\log_3 12} =$

A. 12 B. 4
C. 3 D. 1

15. If $f(x) = \log_e x$ then $f(e^x) =$____

A. e B. 1
C. x D. 0

૧૫. જો $f(x) = \log_e x$ હોય તો $f(e^x) =$____

A. e B. 1
C. x D. 0

16. If $f(x) = 2 - \log(\cos 2x)$ then $f(0) =$____

A. 2 B. 1
C. x D. 0

૧૬. જો $f(x) = 2 - \log(\cos 2x)$ હોય તો $f(0) =$____

A. 2 B. 1
C. x D. 0

17. If $f(x) = \sin x + \cos x$ then $f\left(\frac{\pi}{4}\right) =$____

A. 2 B. $\sqrt{2}$
C. $1/\sqrt{2}$ D. $1/2$

૧૭. જો $f(x) = \sin x + \cos x$ હોય તો $f\left(\frac{\pi}{4}\right) =$____

A. 2 B. $\sqrt{2}$
C. $1/\sqrt{2}$ D. $1/2$

18. If $\begin{vmatrix} x & 1 \\ -1 & x \end{vmatrix} = \begin{vmatrix} 3 & 4 \\ 0 & 1 \end{vmatrix}$ then x=___

A. 0 B. ± 2

C. $\sqrt{2}$ D. ± 1

૧૮. જો $\begin{vmatrix} x & 1 \\ -1 & x \end{vmatrix} = \begin{vmatrix} 3 & 4 \\ 0 & 1 \end{vmatrix}$ હોય તો x=___

A. 0 B. ± 2

C. $\sqrt{2}$ D. ± 1

19. If $h^2 + 5h = \begin{vmatrix} 2 & 4 \\ 2 & 1 \end{vmatrix}$ then h=___

A. -2 or -3 B. 2 or 3

C. -2 or 3 D. 2 or -3

૧૯. જો $h^2 + 5h = \begin{vmatrix} 2 & 4 \\ 2 & 1 \end{vmatrix}$ હોય તો h=___

A. -2 અથવા -3 B. 2 અથવા 3

C. -2 અથવા 3 D. 2 અથવા -3

20. Value of D= $\begin{vmatrix} 0 & 1 & 0 \\ 2 & 3 & -2 \\ 2 & 4 & 1 \end{vmatrix}$ is____ .

A. 2 B. -2

C. 6 D. -6

૨૦. D= $\begin{vmatrix} 0 & 1 & 0 \\ 2 & 3 & -2 \\ 2 & 4 & 1 \end{vmatrix}$ ની કિમત____છે.

A. 2 B. -2

C. 6 D. -6

21. $3\pi/2$ Radian = _____ Degree.

A. 210 B. 180

C. 240 D. 270

૨૧. $3\pi/2$ રેડિયન = _____ ડીગ્રી.

A. 210 B. 180

C. 240 D. 270

22. $\sin^2 42 + \sin^2 48 =$____

A. 0 B. -1

C. 1 D. all

૨૨. $\sin^2 42 + \sin^2 48 =$____

A. 0 B. -1

C. 1 D. ઉપરના તમામ

23. If $\alpha = \pi/2$ then $\cos(\alpha + \pi/2) =$___ .

A. 1 B. 0

C. π D. -1

૨૩. જો $\alpha = \pi/2$ હોય તો $\cos(\alpha + \pi/2) =$___ .

A. 1 B. 0

C. π D. -1

24. $\sin(-\theta) =$___. for all values of θ

A. $\sin\theta$ B. $-\sin\theta$

C. $\cos\theta$ D. $-\cos\theta$

૨૪. θ ની તમામ કિમતો માટે $\sin(-\theta) =$___.

A. $\sin\theta$ B. $-\sin\theta$

C. $\cos\theta$ D. $-\cos\theta$

25. Fundamental period of tanx=_____

A. π B. 2π

C. 3π D. 0

૨૫. tanx નું મુખ્ય આવર્તમાન =_____

A. π B. 2π

C. 3π D. 0

26. cos(p+q)=_____

A. Cosp cosq + sinp sinq B. Sinp cosq + sinq cosp

C. Cosp cosq – sinp sinq D. Sinp cosq – sinq cosp

૨૬. cos(p+q)=_____

A. Cosp cosq + sinp sinq B. Sinp cosq + sinq cosp

C. Cosp cosq – sinp sinq D. Sinp cosq – sinq cosp

27. $\sin^{-1}\left(\cos\frac{\pi}{3}\right)$ = ____ .

A. $\pi/3$ B. $\pi/4$

C. $\pi/6$ D. $\pi/2$

૨૭. $\sin^{-1}\left(\cos\frac{\pi}{3}\right)$ = ____ .

A. $\pi/3$ B. $\pi/4$

C. $\pi/6$ D. $\pi/2$

28. $\tan^{-1}\left(1/2\right)+\tan^{-1}\left(1/3\right)$= ____ .

A. $\pi/3$ B. $\pi/4$

C. $\pi/6$ D. $\pi/2$

૨૮. $\tan^{-1}\left(1/2\right)+\tan^{-1}\left(1/3\right)$= ____ .

A. $\pi/3$ B. $\pi/4$

C. $\pi/6$ D. $\pi/2$

29. 120^0 = _____

A. $\left(2\pi/3\right)^R$ B. $\left(\pi/3\right)^R$

C. $\left(3\pi/2\right)^R$ D. $\left(\pi/2\right)^R$

૨૯. 120^0 = _____

A. $\left(2\pi/3\right)^R$ B. $\left(\pi/3\right)^R$

C. $\left(3\pi/2\right)^R$ D. $\left(\pi/2\right)^R$

30. sin(A+B) + sin(A-B) =_____ .

A. $Sin^2A+ Sin^2B$ B. $Sin^2A - Sin^2B$

C. $cos^2A + cos^2B$ D. $cos^2A - cos^2B$

૩૦. sin(A+B) + sin(A-B) =_____ .

A. $Sin^2A+ Sin^2B$ B. $Sin^2A - Sin^2B$

C. $cos^2A + cos^2B$ D. $cos^2A - cos^2B$

31. If $\bar{p}=\bar{i}+3\bar{j}-2\bar{k}$ then $|\bar{p}|$= ____ .

A. 2 B. 6

C. $\sqrt{12}$ D. $\sqrt{14}$

૩૧. જો $\bar{p}=\bar{i}+3\bar{j}-2\bar{k}$ હોય તો $|\bar{p}|$= ____ .

A. 2 B. 6
C. $\sqrt{12}$ D. $\sqrt{14}$

32. $(\bar{a}\times\bar{b})\cdot\bar{a}$ = ____ .

A. $\bar{a}$ B. $\bar{a}\times\bar{b}$
C. 0 D. $\bar{b}$

૩૨. $(\bar{a}\times\bar{b})\cdot\bar{a}$ = ____ .

A. $\bar{a}$ B. $\bar{a}\times\bar{b}$
C. 0 D. $\bar{b}$

33. $(\bar{i}+\bar{j}+2\bar{k})\cdot(5\bar{i}+3\bar{j}-4\bar{k})$

A. 1 B. 0
C. -1 D. 2

૩૩. $(\bar{i}+\bar{j}+2\bar{k})\cdot(5\bar{i}+3\bar{j}-4\bar{k})$

A. 1 B. 0
C. -1 D. 2

34. Unit vector in the direction of vector $2\bar{i}+2\bar{j}-\bar{k}$ is _____ .

A. $\frac{(2\bar{i}+2\bar{j}-\bar{k})}{3}$ B. $\frac{(2\bar{i}+2\bar{j}-\bar{k})}{9}$
C. $\frac{(2\bar{i}+2\bar{j}-\bar{k})}{4}$ D. $\frac{(2\bar{i}+2\bar{j}-\bar{k})}{5}$

૩૪. સદિશ $2\bar{i}+2\bar{j}-\bar{k}$ ની દિશાનો એકમ સદિશ ____છે.

A. $\frac{(2\bar{i}+2\bar{j}-\bar{k})}{3}$ B. $\frac{(2\bar{i}+2\bar{j}-\bar{k})}{9}$
C. $\frac{(2\bar{i}+2\bar{j}-\bar{k})}{4}$ D. $\frac{(2\bar{i}+2\bar{j}-\bar{k})}{5}$

35. Perpendicular vector to the vector $2\bar{i}-\bar{k}$ is =_____ .

A. $2\bar{i}+\bar{j}+\bar{k}$ B. $\bar{i}+2\bar{j}-\bar{k}$
C. $\bar{i}+2\bar{j}+2\bar{k}$ D. $2\bar{i}+\bar{j}-2\bar{k}$

૩૫. સદિશ $2\bar{i}-\bar{k}$ ને લંબ સદિશ ____છે.

A. $2\bar{i}+\bar{j}+\bar{k}$ B. $\bar{i}+2\bar{j}-\bar{k}$
C. $\bar{i}+2\bar{j}+2\bar{k}$ D. $2\bar{i}+\bar{j}-2\bar{k}$

36. If force $\bar{F}=\bar{i}+3\bar{j}+4\bar{k}$ and displacement $\bar{d}=2\bar{i}-\bar{j}+3\bar{k}$ the workdone=_____ .

A. 8 B. 9
C. 10 D. 11

૩૬. જો બળ Force $\bar{F}=\bar{i}+3\bar{j}+4\bar{k}$ અને સ્થનાંતર $\bar{d}=2\bar{i}-\bar{j}+3\bar{k}$ હોય તો થયેલ કાર્ય ____છે.

A. 8 B. 9
C. 10 D. 11

37. If $\bar{a}=\bar{i}-\bar{j}-\bar{k}$ and $\bar{b}=3\bar{i}+\bar{j}+5\bar{k}$ then $|\bar{a}+\bar{b}|$=_____

A. $2\sqrt{2}$ B. $4\sqrt{2}$
C. $3\sqrt{2}$ D. $\sqrt{16}$

૩૭. જો $\bar{a}=\bar{i}-\bar{j}-\bar{k}$ અને $\bar{b}=3\bar{i}+\bar{j}+5\bar{k}$ હોય તો $|\bar{a}+\bar{b}|$=_____

A. $2\sqrt{2}$ B. $4\sqrt{2}$
C. $3\sqrt{2}$ D. $\sqrt{16}$

38. $\bar{k}\times\bar{i}$ = ___ .

A. $\bar{j}$ B. $-\bar{j}$
C. $\bar{k}$ D. $\bar{i}$

$\bar{k}\times\bar{i}$ = ___ .

૩૮. A. $\bar{j}$ B. $-\bar{j}$

C. $\bar{k}$ D. $\bar{i}$

39. $\bar{j}\cdot\bar{j}=$ ____ .

A. $\bar{j}$ B. $-\bar{j}$

C. 1 D. -1

૩૯. $\bar{j}\cdot\bar{j}=$ ____ .

A. $\bar{j}$ B. $-\bar{j}$

C. 1 D. -1

40. If the angle between the vectors $\bar{x}$ and $\bar{y}$ is θ then $\cos\theta=$_____

A. $\frac{\bar{x}\cdot\bar{y}}{|\bar{x}||\bar{y}|}$ B. $\frac{|\bar{x}||\bar{y}|}{\bar{x}\cdot\bar{y}}$

C. $\frac{\bar{x}\cdot\bar{y}}{|\bar{x}|}$ D. $\frac{\bar{x}\cdot\bar{y}}{|\bar{y}|}$

૪૦. જો સદિશો $\bar{x}$ અને $\bar{y}$ વચ્ચેનો ખુણો θ હોય તો $\cos\theta=$_____

A. $\frac{\bar{x}\cdot\bar{y}}{|\bar{x}||\bar{y}|}$ B. $\frac{|\bar{x}||\bar{y}|}{\bar{x}\cdot\bar{y}}$

C. $\frac{\bar{x}\cdot\bar{y}}{|\bar{x}|}$ D. $\frac{\bar{x}\cdot\bar{y}}{|\bar{y}|}$

41. If $(2\bar{i}-3\bar{j}+5\bar{k})\perp(m\bar{i}-6\bar{j}-8\bar{k})$ then m=____ .

A. 10 B. 22

C. 11 D. 12

૪૧. જો $(2\bar{i}-3\bar{j}+5\bar{k})\perp(m\bar{i}-6\bar{j}-8\bar{k})$ હોય તો m=____ .

A. 10 B. 22

C. 11 D. 12

42. $\left|2\bar{i}-2\bar{j}+\bar{k}\right|+\left|3\bar{j}+4\bar{k}\right|$ = _____ .

A. 7 B. 8

C. 9 D. 10

૪૨. $\left|2\bar{i}-2\bar{j}+\bar{k}\right|+\left|3\bar{j}+4\bar{k}\right|$ = _____ .

A. 7 B. 8

C. 9 D. 10

43. $\bar{x}=(-1,0,0)\ \bar{y}=(1,-2,2)$ then $\bar{x}\times\bar{y}=$_____ .

A. $(0,2,2)$ B. $(0,-2,-2)$

C. $(0,-2,2)$ D. $(0,2,-2)$

૪૩. $\bar{x}=(-1,0,0)\ \bar{y}=(1,-2,2)$ હોય તો $\bar{x}\times\bar{y}=$_____ .

A. $(0,2,2)$ B. $(0,-2,-2)$

C. $(0,-2,2)$ D. $(0,2,-2)$

44. For the vectors $\bar{x}$ and $\bar{y}$ which option is correct ?

A. $|\bar{x}+\bar{y}|=|\bar{x}|+|\bar{y}|$ B. $|\bar{x}+\bar{y}|\le|\bar{x}|+|\bar{y}|$

C. $|\bar{x}+\bar{y}|\ge|\bar{x}|+|\bar{y}|$ D. $|\bar{x}+\bar{y}|>|\bar{x}|+|\bar{y}|$

૪૪. સદિશો $\bar{x}$ અને $\bar{y}$ માટે ક્યો વિકલ્પ સાચો છે ?

A. $|\bar{x}+\bar{y}|=|\bar{x}|+|\bar{y}|$ B. $|\bar{x}+\bar{y}|\le|\bar{x}|+|\bar{y}|$

C. $|\bar{x}+\bar{y}|\ge|\bar{x}|+|\bar{y}|$ D. $|\bar{x}+\bar{y}|>|\bar{x}|+|\bar{y}|$

45. Slope of line 3x-2y+5=0 is _____

A. $-\frac{3}{2}$ B. $\frac{3}{2}$

C. $-\frac{2}{3}$ D. $\frac{2}{3}$

૪૫. સુરેખા $3x-2y+5=0$ નો ઢાળ _____ છે.

A. $-\frac{3}{2}$ B. $\frac{3}{2}$

C. $-\frac{2}{3}$ D. $\frac{2}{3}$

46. If slope of l_1 is m_1 and slope of l_2 is m_2 also $l_1 \perp l_2$ then

A. $m_1 = m_2$ B. $m_1 < m_2$

C. $m_1 > m_2$ D. $m_1 m_2 = -1$

૪૬. જો સુરેખા l_1 નો ઢાળ m_1 અને સુરેખા l_2 નો ઢાળ m_2 તથા $l_1 \perp l_2$ હોય તો

A. $m_1 = m_2$ B. $m_1 < m_2$

C. $m_1 > m_2$ D. $m_1 m_2 = -1$

47. Line l_1: $4x+3y=1$ and l_1 is parallel to line l_2 then slope of l_2 is ____ .

A. $-\frac{3}{4}$ B. $\frac{3}{4}$

C. $-\frac{4}{3}$ D. $\frac{4}{3}$

૪૭. સુરેખા l_1: $4x+3y=1$ તથા l_1 અને l_2 સમાંતર રેખાઓ છે તો l_2 નો ઢાળ____ છે.

A. $-\frac{3}{4}$ B. $\frac{3}{4}$

C. $-\frac{4}{3}$ D. $\frac{4}{3}$

48. Angle between lines $x+y=0$ and $x-y=0$ is _____ .

A. 0 B. 45^0

C. 30^0 D. 90^0

૪૮. સુરેખાઓ $x+y=0$ અને $x-y=0$ વચ્ચેનો ખુણો ____ છે.

A. 0 B. 45^0

C. 30^0 D. 90^0

49. x-Intercept of line $2x-3y+4=0$ is ____ .

A. -2 B. 2

C. -3 D. 3

૪૯. સુરેખા $2x-3y+4=0$ નો x- નો અંત:ખંડ ____ છે.

A. -2 B. 2

C. -3 D. 3

50. Equation of line passing through the points (2,3) and (3,-1) is ___ .

A. $4x+2y = 11$ B. $4x -2y = 11$

C. $4x - y = 11$ D. $4x + y = 11$

૫૦. (2,3) અને (3,-1) માંથી પસાર થતી રેખાનુ સમીકરણ ___ છે.

A. $4x+2y = 11$ B. $4x -2y = 11$

C. $4x - y = 11$ D. $4x + y = 11$

51. y-Intercept of line is -3 then the line is passing through point is ____ .

A. (-3,0) B. (3,0)

C. (0,-3) D. (0,3)

૫૧. સુરેખાનો y- અંત:ખંડ -3 છે તો રેખા ____બિંદુમાંથી પસાર થાય છે.

A. (-3,0) B. (3,0)

C. (0,-3) D. (0,3)

52. Equation of line passing through the points (1,1) and having slope 2 is ___

A. $2x-y-1=0$ B. $x-2y+1=0$

C. $2x-y-3=0$ D. $x-2y+3=0$

૫૨. (1,1) માંથી પસાર થતી અને જેનો ઢાળ 2 હોય તેવી રેખાનુ સમીકરણ ___ છે.

A. $2x-y-1=0$ B. $x-2y+1=0$

C. $2x-y-3=0$ D. $x-2y+3=0$

53. Equation of circle having centre (0,0) and radius 2 is ___

A. $x^2+y^2=2$ B. $x^2+y^2=4$

C. $x^2+y^2=1$ D. $x^2+y^2=\sqrt{2}$

૫૩. કેન્દ્ર (0,0) અને ત્રિજ્યા 2 હોય તેવા વર્તુળ નું સમીકરણ ___ છે.

A. $x^2+y^2=2$ B. $x^2+y^2=4$

C. $x^2+y^2=1$ D. $x^2+y^2=\sqrt{2}$

54. Centre of circle $x^2+y^2-4x-6y-2=0$ is_____ .

A. (2,3) B. (-2,-3)

C. (3,2) D. (-3,-2)

૫૪. વર્તુળ $x^2+y^2-4x-6y-2=0$ નું કેન્દ્ર ___ છે.

A. (2,3) B. (-2,-3)

C. (3,2) D. (-3,-2)

55. Radius of circle $x^2+y^2=25$ is _____ .

A. 5 B. 25

C. -5 D. 1

૫૫. વર્તુળ $x^2+y^2=25$ ની ત્રિજ્યા ___ છે.

A. 5 B. 25

C. -5 D. 1

56. Equation of circle having centre (-2,5) and radius 4 is ___

A. $x^2+y^2+4x-10y+10=0$ B. $x^2+y^2+4x-10y+13=0$

C. $x^2+y^2-4x+10y+10=0$ D. $x^2+y^2-4x+10y+13=0$

૫૬. કેન્દ્ર (-2,5) અને ત્રિજ્યા 4 હોય તેવા વર્તુળ નું સમીકરણ ___ છે.

A. $x^2+y^2+4x-10y+10=0$ B. $x^2+y^2+4x-10y+13=0$

C. $x^2+y^2-4x+10y+10=0$ D. $x^2+y^2-4x+10y+13=0$

57. Equation of normal of standard circle at (x_1,y_1) is____ .

A. $xy_1=yx_1$ B. $xx_1=yy_1$

C. $x_1y_1=y$ D. $x_1y_1=x$

૫૭. (x_1,y_1) બિંદુ આગળ પ્રમાણિત વર્તુળ ના અભિલંબ નું સમીકરણ ___ છે.

A. $xy_1=yx_1$ B. $xx_1=yy_1$

C. $x_1y_1=y$ D. $x_1y_1=x$

58. Radius of circle $x^2+y^2+4x-8y+k=0$ is 4 then k =____

A. 2 B. -2

C. 4 D. -4

૫૮. વર્તુળ $x^2+y^2+4x-8y+k=0$ ની ત્રિજ્યા 4 હોય તો k =____

A. 2 B. -2

C. 4 D. -4

59. $\lim_{n\to -1}\frac{2n+3}{3n+2}=$ _____ .

A. 0 B. 1

C. 2 D. -1

૫૯. $\lim_{n\to -1}\frac{2n+3}{3n+2}=$ _____ .

A. 0 B. 1

C. 2 D. -1

60. $\lim_{x\to 0}\frac{x}{\tan 5x}=$ ____.

A. 0 B. $1/5$

C. 1 D. 5

૬૦. $\lim_{x\to 0}\frac{x}{\tan 5x}=$ ____.

A. 0 B. $1/5$

C. 1 D. 5

61. $\lim_{x\to 0}(1-x)^{\frac{1}{x}} = \_\_\_\_.$

A. e
B. 1
C. $1/e$
D. 0

๕๑. $\lim_{x\to 0}(1-x)^{\frac{1}{x}} = \_\_\_\_.$

A. e
B. 1
C. $1/e$
D. 0

62. $\lim_{x\to 2}\frac{x^2-5x+6}{x-2} = \_\_\_\_.$

A. 1
B. -1
C. 2
D. 3

๕๒. $\lim_{x\to 2}\frac{x^2-5x+6}{x-2} = \_\_\_\_.$

A. 1
B. -1
C. 2
D. 3

63. $\lim_{\theta\to 0}\frac{\sin 4\theta}{\tan 3\theta} = \_\_\_\_.$

A. $-3/4$
B. $3/4$
C. $-4/3$
D. $4/3$

๕๓. $\lim_{\theta\to 0}\frac{\sin 4\theta}{\tan 3\theta} = \_\_\_\_.$

A. $-3/4$
B. $3/4$
C. $-4/3$
D. $4/3$

64. $\lim_{x\to\infty}\left(1+\frac{2}{x}\right)^{5x} = \_\_\_\_.$

A. e^{25}
B. e^{2}
C. e^{5}
D. e^{10}

๕๔. $\lim_{x\to\infty}\left(1+\frac{2}{x}\right)^{5x} = \_\_\_\_.$

A. e^{25}
B. e^{2}
C. e^{5}
D. e^{10}

65. $\lim_{y\to 3}\left(\frac{3^y-1}{y}\right) = \_\_\_\_.$

A. $\log_e 3$
B. $\log_3 e$
C. $\log_e e$
D. $\log_3 3$

๕๕. $\lim_{y\to 3}\left(\frac{3^y-1}{y}\right) = \_\_\_\_.$

A. $\log_e 3$
B. $\log_3 e$
C. $\log_e e$
D. $\log_3 3$

66. $\lim_{\theta\to 0}\left(\frac{1-\cos\theta}{\theta^2}\right) = \_\_\_\_.$

A. 0
B. 1
C. $1/2$
D. 2

६६. $\lim_{\theta \to 0} \left(\frac{1-\cos\theta}{\theta^2} \right) =$ _____.

A. 0 B. 1

C. $\frac{1}{2}$ D. 2

67. $\lim_{x \to \infty} \frac{x^2+3x+2}{x^2+2x+3} =$ _____.

A. 1 B. 0

C. 2 D. 3

६७. $\lim_{x \to \infty} \frac{x^2+3x+2}{x^2+2x+3} =$ _____.

A. 1 B. 0

C. 2 D. 3

68. $\lim_{x \to \infty} \frac{1}{x} =$ _____.

A. 1 B. 0

C. x D. e

६८. $\lim_{x \to \infty} \frac{1}{x} =$ _____.

A. 1 B. 0

C. x D. e

69. $\lim_{x \to a} \frac{x^n - a^n}{x-a} =$ _____.

A. na^{n-1} B. nx^{n-1}

C. na^{n+1} D. nx^{n+1}

६९. $\lim_{x \to a} \frac{x^n - a^n}{x-a} =$ _____.

A. na^{n-1} B. nx^{n-1}

C. na^{n+1} D. nx^{n+1}

70. $\lim_{\frac{1}{m} \to 0} (1+m)^{\frac{1}{m}} =$ _____.

A. 1 B. 0

C. x D. e

७०. $\lim_{\frac{1}{m} \to 0} (1+m)^{\frac{1}{m}} =$ _____.

A. 1 B. 0

C. x D. e

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