

Enrollment No./Seat No.:

GUJARAT TECHNOLOGICAL UNIVERSITY
DIPLOMA IN ENGINEERING - SEMESTER - II EXAMINATION - WINTER 2025

Subject Code: C320003

Date: 16-01-2026

Subject Name: ADVANCED MATHEMATICS(GROUP-2)

Time: 10:30 AM TO 12:00PM

Total Marks: 70

Instructions:

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

Marks

Q.1 Distance between A(3,4) and B(2,2) is $AB = \underline{\hspace{2cm}}$

- | | |
|-------|---------------|
| A. 5 | B. 15 |
| C. 25 | D. $\sqrt{5}$ |

Q.૧ બિંદુઓ A(3,4) અને B(2,2) વચ્ચેનું અંતર $AB = \underline{\hspace{2cm}}$

- | | |
|-------|---------------|
| A. 5 | B. 15 |
| C. 25 | D. $\sqrt{5}$ |

Q.2 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. $\frac{c}{b}$ |

Q.૨ 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. $\frac{c}{b}$ |

Q.3

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. $\frac{c}{b}$

Q.3

રેખા $ax + by + c = 0, a^2 + b^2 \neq 0$ ની ઢાળ = _____

A. $-\frac{c}{a}$

B. $-\frac{c}{b}$

C. $-\frac{a}{b}$

D. $\frac{c}{b}$

Q.4

For Line $2x + 3y - 1 = 0, a^2 + b^2 \neq 0$, Y - Intercept = _____

A. $-\frac{1}{3}$

B. $\frac{1}{3}$

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

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

Q.૪

રેખા $2x + 3y - 1 = 0, a^2 + b^2 \neq 0$ ની Y - અંતઃખંડ = _____

A. $-\frac{1}{3}$

B. $\frac{1}{3}$

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

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

Q.5

The Cartesian equation of the line passing through the points (2,0) and (0,3) is _____

A. $3x - 2y + 6 = 0$

A. $-3x + 2y - 6 = 0$

C. $3x + 2y - 6 = 0$

C. $3x + 2y + 6 = 0$

Q.૫

બિંદુઓ (2,0) અને (0,3) માંથી પસાર થતી રેખાનું કાર્ટેઝીય સમીકરણ _____ છે.

A. $3x - 2y + 6 = 0$

B. $-3x + 2y - 6 = 0$

C. $3x + 2y - 6 = 0$

D. $3x + 2y + 6 = 0$

Q.6

The slope of a line passing through the points (8,5) and (1,-2) is _____

A. 1

B. $\frac{3}{7}$

C. -1

D. $-\frac{3}{7}$

Q.5

બિંદુઓ (8,5) અને (1,-2) માંથી પસાર થતી રેખાનો ઢાળ ____ છે.

A. 1

B.

$\frac{3}{7}$

C. -1

D.

$-\frac{3}{7}$

Q.7

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. $m_1 \cdot m_2 = -1$

Q.9

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. $m_1 \cdot m_2 = -1$

Q.8

Centre of the circle $(x + 3)^2 + (y - 4)^2 = 5$ is _____

A. (3,-4)

B. (-3,-4)

C. (3,4)

D. (-3,4)

Q.૮

વર્તુળ $(x + 3)^2 + (y - 4)^2 = 5$ નું કેન્દ્ર _____ છે

A. (3,-4)

B. (-3,-4)

C. (3,4)

D. (-3,4)

Q.9

Radius of the circle $(x - 5)^2 + (y - 1)^2 = 25$ is _____

A. 7

B. 5

C. 4

D. 1

Q.૯

વર્તુળ $(x - 5)^2 + (y - 1)^2 = 25$ ની ત્રિજ્યા _____ છે

A. 7

B. 5

C. 4

D. 1

Q.10 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)

Q.૧૦ વર્તુળ $x^2 + y^2 - 2x + 4y + 1 = 0$ નું કેન્દ્ર _____ છે

- A. (-1,2) B. (1,-2)
C. (1,2) D. (-1,-2)

Q.11 Radius of the circle $x^2 + y^2 - 2x + 4y + 1 = 0$ is _____

- A. 9 B. 8
C. 2 D. 4

Q.૧૧ વર્તુળ $x^2 + y^2 - 2x + 4y + 1 = 0$ ની ત્રિજ્યા _____ છે

- A. 9 B. 8
C. 2 D. 4

Q.12 If A(6,4) and B(2,6) then midpoint of line segment $\overline{AB}$ is _____

- A. (2,-1) B. (-2,1)
C. (-4,-5) D. (4,5)

Q.૧૨ જો A(6,4) અને B(2,6) હોય તો રેખાખંડ $\overline{AB}$ નું મધ્યબિંદુ _____ છે.

- A. (2,-1) B. (-2,1)
C. (-4,-5) D. (4,5)

Q.13 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

Q.૧૩ 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

Q.14 Distance between two points (1,1) and (1,-1) is _____

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

Q.૧૪ બે બિંદુઓ (1,1) અને (1,-1) વચ્ચેનું અંતર = _____

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

Q.15 Slope of a line making an angle 45° with positive direction of X-axis is _____

- A. $\sqrt{3}$
B. $\frac{1}{\sqrt{3}}$
C. 1
D. $\frac{1}{2}$

Q.૧૫ X - અક્ષની ધન દિશા સાથે 45° નો ખૂણો બનાવતી રેખાનો ઢાળ ____

- A. $\sqrt{3}$
B. $\frac{1}{\sqrt{3}}$
C. 1
D. $\frac{1}{2}$

Q.16 If two lines having slopes m_1 and m_2 are perpendicular to each other then _____

- A. $m_1 = m_2$
B. $m_1 \cdot m_2 = 1$
C. $m_1 = m_2 - 1$
D. $m_1 \cdot m_2 = -1$

Q.૧૬ m_1 અને m_2 ઢાળ ધરાવતી બે રેખાઓ પરસ્પર લંબ હોય તો _____

- A. $m_1 = m_2$
B. $m_1 \cdot m_2 = 1$
C. $m_1 = m_2 - 1$
D. $m_1 \cdot m_2 = -1$

Q.17 $\lim_{x \rightarrow 0} \left(\frac{\tan^{-1} x}{x} \right) = \text{_____}$

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

Q.17

$$\lim_{x \rightarrow 0} \left(\frac{\tan^{-1} x}{x} \right) = \underline{\hspace{2cm}}$$

A. 1

B. 0

C. -1

D. 2

Q.18

$$\lim_{x \rightarrow 1} (3x^2 + 2x + 1) = \underline{\hspace{2cm}}$$

A. 6

B. 0

C. -2

D. 1

Q.18

$$\lim_{x \rightarrow 1} (3x^2 + 2x + 1) = \underline{\hspace{2cm}}$$

A. 6

B. 0

C. -2

D. 1

Q.19

$$\lim_{x \rightarrow a} \frac{x^n - a^n}{x - a} = \underline{\hspace{2cm}}$$

A. a^{n-1}

B. $\log_e a$

C. na^{n-1}

D. 1

Q.19

$$\lim_{x \rightarrow a} \frac{x^n - a^n}{x - a} = \underline{\hspace{2cm}}$$

A. a^{n-1}

B. $\log_e a$

C. na^{n-1}

D. 1

Q.20

$$\lim_{x \rightarrow 0} \frac{8^x - 1}{x} = \underline{\hspace{2cm}}$$

A. $\log_e 8$

B. 1

C. $\log_8 e$

D. 0

Q.20

$$\lim_{x \rightarrow 0} \frac{8^x - 1}{x} = \text{_____}$$

A. $\log_e 8$

B. 1

C. $\log_8 e$

D. 0

Q.21

$$\lim_{x \rightarrow 0} \frac{\sin 5x}{x} = \text{_____}$$

A. 5

B. 1

C. 0

D. -1

Q.22

$$\lim_{x \rightarrow 0} \frac{\sin 5x}{x} = \text{_____}$$

A. 5

B. 1

C. 0

D. -1

Q.23

$$\text{If } f(x) = \frac{1}{x} \text{ then } f\left(\frac{1}{x}\right) = \text{_____}$$

A. $-x$

B. 0

C. 1

D. x

Q.24

$$\text{If } f(x) = \frac{1}{x} \text{ then } f\left(\frac{1}{x}\right) = \text{_____}$$

A. $-x$

B. 0

C. 1

D. x

Q.25

$$\lim_{n \rightarrow \infty} \frac{10n^2 - 4n - 7}{2n^2} = \text{_____}$$

A. 0

B. 5

C. 3

D. 2

Q.27

$$\frac{d}{dx}(e^x) = \underline{\hspace{2cm}}.$$

A. xe^{x-1}

B. xe^x

C. e^x

D. 1

Q.28

$$\frac{d}{dx}(e^x) = \underline{\hspace{2cm}}.$$

A. xe^{x-1}

B. xe^x

C. e^x

D. 1

Q.28

$$\frac{d}{dx}(\tan x) = \underline{\hspace{2cm}}.$$

A. $\sin^2 x$

B. $\cot x$

C. $-\sec^2 x$

D. $\sec^2 x$

Q.29

$$\frac{d}{dx}(\tan x) = \underline{\hspace{2cm}}.$$

A. $\sin^2 x$

B. $\cot x$

C. $-\sec^2 x$

D. $\sec^2 x$

Q.29

$$\frac{d}{dx}(x^2 + 3^x + 7) = \underline{\hspace{2cm}}.$$

A. $2x + 3^x \log_e 3$

B. $2x + 3^x$

C. $2x + 3^x + 1$

D. $2x + 3^x \log_e 3 + 1$

Q.30

$$\frac{d}{dx}(x^2 + 3^x + 7) = \underline{\hspace{2cm}}.$$

A. $2x + 3^x \log_e 3$

B. $2x + 3^x$

C. $2x + 3^x + 1$

D. $2x + 3^x \log_e 3 + 1$

Q.30

If $y = \log(4x + 2)$ then $y'(x) = \underline{\hspace{2cm}}.$

A. $\frac{1}{4x + 2}$

B. $\frac{4}{4x + 2}$

C. 0

D. 1

Q.30

જો $y = \log(4x + 2)$ તો $y'(x) = \underline{\hspace{2cm}}$.

A. $\frac{1}{4x + 2}$

B. $\frac{4}{4x + 2}$

C. 0

D. 1

Q.31

If $xy = 1$ then $\frac{dy}{dx} = \underline{\hspace{2cm}}$

A. $-\frac{y}{x}$

B. $\frac{x}{y}$

C. $-\frac{1}{x^2}$

D. $-\frac{1}{x}$

Q.3૧

જો $xy = 1$ તો $\frac{dy}{dx} = \underline{\hspace{2cm}}$

A. $-\frac{y}{x}$

B. $\frac{x}{y}$

C. $-\frac{1}{x^2}$

D. $-\frac{1}{x}$

Q.32

If $y = \sin x$ then $\frac{d^2y}{dx^2} = \underline{\hspace{2cm}}$

A. y

B. $\cos x$

C. $-y$

D. $-\cos x$

Q.3૨

જો $y = \sin x$ તો $\frac{d^2y}{dx^2} = \underline{\hspace{2cm}}$

A. y

B. $\cos x$

C. $-y$

D. $-\cos x$

Q.33

$\frac{d}{dx}(\tan^{-1} x + \cot^{-1} x) = \underline{\hspace{2cm}}$.

A. 1

B. $\frac{2}{1 + x^2}$

C. 0

D. $\frac{-2}{1 + x^2}$

Q.33

$$\frac{d}{dx}(\tan^{-1}x + \cot^{-1}x) = \text{_____}.$$

A. 1

B. $\frac{2}{1+x^2}$

C. 0

D. $\frac{-2}{1+x^2}$

Q.34

જો $x = t^3$ અને $y = t + 1$ નો $\frac{dy}{dx} = \text{_____}$.

A. $-3t^2$

B. $3t^2$

C. $-\frac{1}{3t^2}$

D. $\frac{1}{3t^2}$

Q.35

જો $x = t^3$ અને $y = t + 1$ નો $\frac{dy}{dx} = \text{_____}$.

A. $-3t^2$

B. $3t^2$

C. $-\frac{1}{3t^2}$

D. $\frac{1}{3t^2}$

Q.35

If the equation of motion of a particle is $s = 3t^2 - 1$ then velocity at $t = 2$ second is_____.

A. 12 m/sec

B. 18 m/s

C. 6 m/s

D. None of these

Q.36

જો એક કણની ગતિ સમીકરણ $s = 3t^2 - 1$ હોય તો $t = 2$ સેકન્ડે કણનો વેગ_____ થશે

A. 12 m/s

B. 18 m/s

C. 6 m/s

D. None of these

Q.36

$f(x)$ has minimum value at $x = a$ if _____

A. $f'(a) = 0, f''(a) = 0$

B. $f'(a) > 0, f''(a) < 0$

C. $f'(a) = 0, f''(a) > 0$

D. $f'(a) = 0, f''(a) < 0$

Q.37

$x = a$ આગળ વિધેય $f(x)$ નો ક્રિયાત્મક બિંદુ હોય તો _____

A. $f'(a) = 0, f''(a) = 0$

B. $f'(a) > 0, f''(a) < 0$

C. $f'(a) = 0, f''(a) > 0$

D. $f'(a) = 0, f''(a) < 0$

Q.37

$$\frac{d}{dx}(\log 4) = \text{_____}.$$

A. $\frac{1}{4}$

B. 0

C. 4

D. 1

Q.38

$$\frac{d}{dx}(\log 4) = \text{_____}.$$

A. $\frac{1}{4}$

B. 0

C. 4

D. 1

Q.39

$$y = \log(\sin x) \quad \text{then} \quad \frac{dy}{dx}$$

A. $\cot x$

B. $-\cot x$

C. $\tan x$

D. $\operatorname{cosec} x$

Q.40

$$y = \log(\sin x) \quad \text{then} \quad \frac{dy}{dx} = \text{_____}.$$

A. $\cot x$

B. $-\cot x$

C. $\tan x$

D. $\operatorname{cosec} x$

Q.41

$$\frac{d}{dx}(\sqrt{x}) = \text{_____}.$$

A. $\frac{1}{\sqrt{x}}$

B. $\frac{1}{2\sqrt{x}}$

C. $2\sqrt{x}$

D. 1

Q.42

$$\frac{d}{dx}(\sqrt{x}) = \text{_____}.$$

A. $\frac{1}{\sqrt{x}}$

B. $\frac{1}{2\sqrt{x}}$

C. $2\sqrt{x}$

D. 1

Q.43

$$\text{If } f(x) = x^4 - 2x^3 + 5 \text{ then } f'(-1) = \text{_____}$$

A. -10

B. 2

C. 10

D. -2

Q.40

Given $f(x) = x^4 - 2x^3 + 5$ find $f'(-1) = \underline{\hspace{2cm}}$

A. -10

B. 2

C. 10

D. -2

Q.41

$\frac{d}{dx}(\log x^2) = \underline{\hspace{2cm}}$

A. $\frac{1}{x^2}$

B. $2x$

C. $\frac{2}{x}$

D. $\frac{1}{x}$

Q.42

$\frac{d}{dx}(\log x^2) = \underline{\hspace{2cm}}$

A. $\frac{1}{x^2}$

B. $2x$

C. $\frac{2}{x}$

D. $\frac{1}{x}$

Q.43

$\frac{d}{dx}\left(\sin \frac{\pi}{2}\right) = \underline{\hspace{2cm}}$

A. 0

B. $\cos \frac{\pi}{2}$

C. 1

D. $-\cos \frac{\pi}{2}$

Q.44

$\frac{d}{dx}\left(\sin \frac{\pi}{2}\right) = \underline{\hspace{2cm}}$

A. 0

B. $\cos \frac{\pi}{2}$

C. 1

D. $-\cos \frac{\pi}{2}$

Q.45

$\frac{d}{dx}(\sin^{-1} x)$

A. 0

B. $\frac{1}{\sqrt{1-x^2}}$

C. 1

D. $\frac{-1}{\sqrt{1-x^2}}$

Q.૪૩

$$\frac{d}{dx}(\sin^{-1} x)$$

A. 0

B. $\frac{1}{\sqrt{1-x^2}}$

C. 1

D. $\frac{-1}{\sqrt{1-x^2}}$

Q.44

If the equation of motion of a particle is $s = t^3 + 2t - 1$ then acceleration at $t = 3$ second is_____.

A. 12 m/sec²

B. 18 m/sec²

C. 6 m/sec²

D. None of these

Q.૪૪

જો એક કણની ગતિનું સમીકરણ $s = t^3 + 2t - 1$ હોય તો $t = 3$ સેકન્ડે કણનો

પ્રવેગ_____થશે

A. 12 m/sec²

B. 18 m/sec²

C. 6 m/sec²

D. None of these

Q.45

$$\int 3 dx = \text{_____}$$

A. $3x + c$

B. 0

C. $3 + c$

D. x

Q.૪૫

$$\int 3 dx = \text{_____}$$

A. $3x + c$

A. 0

C. $3 + c$

C. x

Q.46

$$\int \frac{1}{x^2 + 1} dx = \text{_____}$$

A. $\sec^{-1}x + c$

B. $\sin^{-1}x + c$

C. $\tan^{-1}x + c$

D. $\cos^{-1}x + c$

Q.૪૬

$$\int \frac{1}{x^2 + 1} dx = \underline{\hspace{2cm}}$$

A. $\sec^{-1}x + c$

B. $\sin^{-1}x + c$

C. $\tan^{-1}x + c$

D. $\cos^{-1}x + c$

Q.47

$$\int (\sin^{-1}x + \cos^{-1}x) dx = \underline{\hspace{2cm}} + c$$

A. $\pi \cdot x$

B. $\frac{\pi}{2} \cdot x$

C. π

D. $\frac{\pi}{2}$

Q.૪૭

$$\int (\sin^{-1}x + \cos^{-1}x) dx = \underline{\hspace{2cm}} + c$$

A. $\pi \cdot x$

B. $\frac{\pi}{2} \cdot x$

C. π

D. $\frac{\pi}{2}$

Q.48

$$\int u \cdot v dx = \underline{\hspace{2cm}} \text{ (here } u \text{ and } v \text{ are functions of variable } x \text{)}$$

A. $u \int v dx - \int \left(\frac{d}{dx}(u) \cdot \int v dx \right) dx$

B. $u \int v dx + v \int u dx$

C. $\int v dx - \int \left(\frac{d}{dx}(u) \right) dx$

D. None of These

Q.૪૮

$$\int u \cdot v dx = \underline{\hspace{2cm}} \text{ (અહીં } u \text{ અને } v \text{ ચલ } x \text{ ની વિધેયો છે)}$$

A. $u \int v dx - \int \left(\frac{d}{dx}(u) \cdot \int v dx \right) dx$

B. $u \int v dx + v \int u dx$

C. $\int u dx - \int \left(\frac{d}{dx}(u) \cdot \int v dx \right) dx$

D. અભિવિધિ એક પણ નહિ

Q.49

$$\int_0^1 3x^2 + 1 dx = \underline{\hspace{2cm}}$$

A. 4

B. 1

C. 0

D. 2

Q.49

$$\int_0^1 3x^2 + 1 \, dx = \underline{\hspace{2cm}}$$

A. 4

B. 1

C. 0

D. 2

Q.50

$$\int \frac{f'(x)}{f(x)} \, dx = \underline{\hspace{2cm}} + c$$

A. $f'(x)$

B. $f(x)$

C. x

D. $\log|f(x)|$

Q.50

$$\int \frac{f'(x)}{f(x)} \, dx = \underline{\hspace{2cm}} + c$$

A. $f'(x)$

B. $f(x)$

C. x

D. $\log|f(x)|$

Q.51

$$\int \sin x \, dx = \underline{\hspace{2cm}} + c$$

A. $-\operatorname{cosec} x$

B. $\cos x$

C. $\operatorname{cosec} x$

D. $-\cos x$

Q.51

$$\int \sin x \, dx = \underline{\hspace{2cm}} + c$$

A. $-\operatorname{cosec} x$

B. $\cos x$

C. $\operatorname{cosec} x$

D. $-\cos x$

Q.52

$$\int_0^{\frac{\pi}{2}} 1 \, dx = \underline{\hspace{2cm}}$$

A. $\frac{\pi}{4}$

B. $\frac{\pi}{2}$

C. π

D. 0

Q.૫૨

$$\int_0^{\frac{\pi}{2}} 1 \, dx = \underline{\hspace{2cm}}$$

A. $\frac{\pi}{4}$

B. $\frac{\pi}{2}$

C. π

D. 0

Q.53

The area of the region bounded by the line $y = x, x = 0, x = 2$ and $X - axis$ is _____sq. Unit.

A. 4

B. 6

C. 2

D. 8

Q.૫૩

રેખાખંડ $y = x, x = 0, x = 2$ અને $X - axis$ વચ્ચે ઘેરાતી પ્રદેશનું ક્ષેત્રફળ=___ ચો. એકમ

A. 4

B. 6

C. 2

D. 8

Q.54

$$\int \sin^3 x \cdot \cos x \, dx = \underline{\hspace{2cm}} + c$$

A. $\frac{\sin^2 x}{2}$

B. $\frac{\sin^4 x}{4}$

C. $\log|\sin x|$

D. $\log|\cos x|$

Q.૫૪

$$\int \sin^3 x \cdot \cos x \, dx = \underline{\hspace{2cm}} + c$$

A. $\frac{\sin^2 x}{2}$

B. $\frac{\sin^4 x}{4}$

C. $\log|\sin x|$

D. $\log|\cos x|$

Q.55

$$\int \left(x^2 + 2\sec^2 x + \frac{1}{x} \right) dx = \underline{\hspace{2cm}} + c$$

A. $x^3 + 2 \cot x + \log|x|$

B. $2x + 2 \sec x \tan x + \log|x|$

C. $\frac{x^3}{3} + 2 \tan x + \log|x|$

D. None of these

Q.44

$$\int \left(x^2 + 2 \sec^2 x + \frac{1}{x} \right) dx = \text{_____} + c$$

- A. $x^3 + 2 \cot x + \log|x|$ B. $2x + 2 \sec x \tan x + \log|x|$
C. $\frac{x^3}{3} + 2 \tan x + \log|x|$ D. અમાંથી એક પણ નહિ

Q.56

$$\int_{-5}^5 x^3 dx = \text{_____} + c$$

- A. 1250 B. 0
C. 312.5 D. 250

Q.45

$$\int_{-5}^5 x^3 dx = \text{_____} + c$$

- A. 1250 B. 0
C. 312.5 D. 250

Q.57

$$\text{for } a = b, \quad \int_a^b f(x) dx = \text{_____}$$

- A. 0 B. 2
C. 1 D. None of these

Q.46

$$a = b \text{ માટે, } \int_a^b f(x) dx = \text{_____}$$

- A. 0 B. 2
C. 1 D. અમાંથી એક પણ નહિ

Q.58

$$\int e^{3x} dx = \text{_____} + c$$

- A. e^{3x} B. $3x$
C. $\frac{e^{3x}}{3}$ D. $3e^{3x}$

Q.48

$$\int e^{3x} dx = \text{_____} + c$$

A. e^{3x}

B. $3x$

C. $\frac{e^{3x}}{3}$

D. $3e^{3x}$

Q.59

$$\int \left(x + \frac{1}{x} \right) dx = \text{_____} + c$$

A. $1 + \log x$

B. $\frac{x^2}{2} + \log x$

C. $1 - \log x$

D. $1 - \frac{x^2}{2}$

Q.49

$$\int \left(x + \frac{1}{x} \right) dx = \text{_____} + c$$

A. $1 + \log x$

B. $\frac{x^2}{2} + \log x$

C. $1 - \log x$

D. $1 - \frac{x^2}{2}$

Q.60

$$\int \frac{1}{x^2 + 9} dx = \text{_____}$$

A. $\frac{1}{3} \tan^{-1} x + c$

B. $\sin^{-1} 3 + c$

C. $\tan^{-1} \frac{x}{3} + c$

D. $\frac{1}{3} \tan^{-1} \frac{x}{3} + c$

Q.50

$$\int \frac{1}{x^2 + 9} dx = \text{_____}$$

A. $\frac{1}{3} \tan^{-1} x + c$

B. $\sin^{-1} 3 + c$

C. $\tan^{-1} \frac{x}{3} + c$

D. $\frac{1}{3} \tan^{-1} \frac{x}{3} + c$

Q.61

Find the mean for the first ten natural numbers.

- A. 5.4 B. 5
C. 5.5 D. 6

Q.59

પ્રથમ દશ પ્રાકૃતિક સંખ્યાઓનો મધ્યક શોધો.

- A. 5.4
- B. 5
- C. 5.5
- D. 6

Q.62

Find the mean for the following data.

32, 26, 41, 35, 28, 42, 36, 40, 33, 42

- A. 35 B. 35.4
C. 34.5 D. 35.5

Q.52

મધ્યક શોધો.

32, 26, 41, 35, 28, 42, 36, 40, 33, 42

- A. 35
B. 35.4
C. 34.5
D. 35.5

Q.63

If the mean of 5 observations $x - 8, x - 5, x - 3, x + 2, x + 4$ is 8 then find the value of x .

- A. 10 B. 12.4
C. 6 D. 3.6

Q.53

જો પાંચ અવલોકનો $x-8, x-5, x-3, x+2, x+4$ નો મધ્યક 8 હોય તો x ની કિંમત શોધો.

- A. 10
B. 12.4
C. 6
D. 3.6

Q.64

The range of the data 17, 15, 25, 34, 32 is _____

- A. 32
B. 15
C. 17
D. 19

Q.5૪

માહિતી 17, 15, 25, 34, 32 ની વિસ્તાર ____ છે.

A. 32

B. 15

C. 17

D. 19

Q.65

For the data 1,3,5,7,8,9,12,14,17 Median=_____

A. 7

B. 9

C. 8

D. 12

Q.5૫

માહિતી 1,3,5,7,8,9,12,14,17 માટે મધ્યસ્થ =_____

A. 7

B. 9

C. 8

D. 12

Q.66

For the data 4,3,5,5,6,7,8,1,5,9,5,5 Mode =_____

A. 7

B. 5

C. 8

D. 9

Q.5૬

માહિતી 4,3,5,5,6,7,8,1,5,9,5,5 માટે બહુલક =_____

A. 7

B. 5

C. 8

D. 9

Q.67

The mean deviation about mean of n observation is

A. $\delta\bar{x} = \sum |x_i - \bar{x}|$

B. $\delta\bar{x} = \frac{|x_i - \bar{x}|}{n}$

C. $\delta\bar{x} = \sum \left(\frac{|x_i - \bar{x}|}{n} \right)$

D. $\delta\bar{x} = \frac{1}{n} \sum |x_i - \bar{x}|$

Q.5૭

n અવલોકનો માટે મધ્યકથી શરેરાશ વિચલન નું સૂત્ર _____

A. $\delta\bar{x} = \sum |x_i - \bar{x}|$

B. $\delta\bar{x} = \frac{|x_i - \bar{x}|}{n}$

C. $\delta\bar{x} = \sum \left(\frac{|x_i - \bar{x}|}{n} \right)$

D. $\delta\bar{x} = \frac{1}{n} \sum |x_i - \bar{x}|$

Q.68

For the data 12,16,18,21,24,26,27,35 Median=_____

A. 20

B. 24

C. 22.5

D. 26

Q.68

માહિતી 12,16,18,21,24,26,27,35 માટે મધ્યસ્થ = _____

A. 20

B. 24

C. 22.5

D. 26

Q.69

No. of children	0	1	2	3	4
No. of Family	2	3	8	5	1

For above data Mode=_____

A. 1

B. 2

C. 3

D. 4

Q.69

બાળકોની સંખ્યા	0	1	2	3	4
કુટુંબની સંખ્યા	2	3	8	5	1

ઉપરની માહિતી માટે બહુવક = _____

A. 1

B. 2

C. 3

D. 4

Q.70

x_i	0	2	3	4
f_i	3	5	4	1

For above data Mean = _____

A. 1

B. 2

C. 3

D. 4

Q.૭૦

x_i	0	2	3	4
f_i	3	5	4	1

ઉપરની માહિતી માટે મધ્યક = _____

A. 1

B. 2

C. 3

D. 4
