CUET 2026 May 18 Shift 2 Mathematics

Question Paper (Memory-Based)

Conducted by National Testing Agency (NTA)

General Instructions

(i) The examination will be conducted in Computer-Based Test (CBT) mode.

(ii) Each question carries +5 marks for correct answer and -1 mark for wrong answer.

(iii) The total number of questions are 50.

(iv) Duration of the exam is 1 hour (60 minutes).

1. Match the following integrals in Column I with their corresponding results in Column II:

Column I	Column II
$A.\ \int \frac{dx}{x^2-a^2}$	$I.\ \frac{1}{2a}\log\left\|\frac{a+x}{a-x}\right\|+C$
$B.\ \int \frac{dx}{a^2-x^2}$	$II.\ \log\left\|x+\sqrt{x^2-a^2}\right\|+C$
$C.\ \int \frac{dx}{\sqrt{x^2-a^2}}$	$III.\ \frac{1}{2a}\log\left\|\frac{x-a}{x+a}\right\|+C$
$D.\ \int \frac{dx}{\sqrt{a^2-x^2}}$	$IV.\ \sin^{-1}\frac{x}{a}+C$

(A) $A-I,\ B-III,\ C-IV,\ D-II$

(B) $A-III,\ B-I,\ C-II,\ D-IV$

(C) $A-III,\ B-II,\ C-I,\ D-IV$

(D) $A-IV,\ B-II,\ C-III,\ D-I$

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2. If $R=\{(x,y)\mid x,y\in\mathbb{Z},\ x^2+y^2\le 4\}$ is a relation in $\mathbb{Z}$, then the domain of R is:

(A) $\{0,1,2\}$

(B) $\{0,-1,-2\}$

(C) $\{-2,-1,0,1,2\}$

(D) $\{-1,0,2\}$

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3. If $R=\{(x,y)\mid x,y\in\mathbb{R},\ x^2+y^2=1\}$ is a relation in $\mathbb{R}$, then R is:

(A) Reflexive

(B) Symmetric

(C) Transitive

(D) Equivalence Relation

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4. The value of $\cot^{-1}\left[2\cos\left(2\sin^{-1}\frac{1}{2}\right)\right]$ is:

(A) $\frac{\pi}{6}$

(B) $\frac{\pi}{4}$

(C) $\frac{2\pi}{3}$

(D) $\frac{\pi}{3}$

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5. The value of $\cos\left(\frac{\pi}{6}-\cos^{-1}\left(-\frac{\sqrt{3}}{2}\right)\right)$ is equal to:

(A) $-\frac{\sqrt{1}}{2}$

(B) $-\frac{1}{\sqrt{2}}$

(C) $-\frac{1}{2}$

(D) $\frac{1}{2}$

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6. If $A=\begin{bmatrix}2 & 3\\ 5 & -2\end{bmatrix}$, then:

(A) $A^{-1}=\frac{1}{11}A$

(B) $A^{-1}=\frac{1}{19}A$

(C) $A^{-1}=-\frac{1}{19}A$

(D) $A^{-1}=\frac{1}{7}A$

7. The value of λ for which the following system of equations has unique solution:

$$\lambda x + 3y - z = 1$$

$$x + 2y + z = 2$$

$$-\lambda x + y + 2z = -1$$

are:

(A) $\lambda \neq \frac{5}{2}$

(B) $\lambda \neq \frac{3}{2}$

(C) $\lambda \neq \frac{7}{2}$

(D) $\lambda \neq -\frac{7}{2}$

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8. If B is a non-singular 4×4 matrix and A is its adjoint such that $|A| = 125$, then $|B|$ is:

(A) 5

(B) 25

(C) 125

(D) 625

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9. If A is a square matrix of order 3 such that $|2(\text{adj}A)| = 288$, then the value of $|A|$ is:

(A) 144

(B) 36

(C) ± 12

(D) ± 6

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10. If A is a square matrix of order 3 and $|A| = -3$, then the value of $|2AA^T|$ is:

(A) -36

(B) 72

(C) −72

(D) 36