CUET 2026 May 19 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. If

$$\begin{bmatrix} 2x+1 & 5x \\ 0 & y^2+1 \end{bmatrix} = \begin{bmatrix} x+3 & 10 \\ 0 & 26 \end{bmatrix}$$

then the possible values of $x+y$ are:

(A) 2 and 5

(B) 5 and -1

(C) 7 and -3

(D) 2 and -5

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2. Given a matrix A of order 3×3. If

$$|A| = 3$$

then the value of

$$|A(\text{adj}A)|$$

is:

(A) 3

(B) 27

(C) 9

(D) 81

3. For the L.P.P. Maximize

$$z = 10x + 6y$$

subjected to:

$$3x + y \leq 12$$

$$2x + 5y \leq 34$$

$$x, y \geq 0$$

Then the feasible region represented by system of inequalities is:

(A) Unbounded in first quadrant

(B) Bounded in first quadrant

(C) Unbounded in second quadrant

(D) Not possible (Empty)

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4. A unit vector perpendicular to the vectors

$$\hat{i} - \hat{j}$$

and

$$\hat{i} + \hat{j}$$

is:

(A) $\hat{k}$

(B) $-\frac{\hat{i} + \hat{j}}{\sqrt{2}}$

(C) $\frac{\hat{i} - \hat{j}}{\sqrt{2}}$

(D) $\frac{\hat{i} + \hat{j}}{\sqrt{2}}$

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5. The relation R on the set of real numbers defined by

$$R = \{(a, b) : a \leq b^2\}$$

is:

(A) Reflexive

(B) Not symmetric

(C) Neither reflexive nor transitive

(D) Transitive

Choose the correct answer from the options given below:

(A) (A) and (D) only

(B) (A), (B) and (D) only

(C) (B) and (C) only

(D) (A) and (C) only

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6. If the system of equations

$$x - 3y + 5z = 3$$

$$x - 2y + 4z = 4$$

$$2x - 7y + \lambda z = 5$$

has infinite number of solutions, then the value of λ is:

(A) 2

(B) 4

(C) 5

(D) 11

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7. The sum of order and degree of the differential equation

$$y = x\frac{dy}{dx} + 2\sqrt{1 + \left(\frac{dy}{dx}\right)^2}$$

is:

(A) 1

(B) 2

(C) 3

(D) 4

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8. The function

$$f : \mathbb{R} \to \mathbb{R}, \qquad f(x) = |x|$$

($\mathbb{R}$ is the set of real numbers) is:

(A) Injective but not surjective

(B) Surjective but not injective

(C) Both injective and surjective

(D) Neither injective nor surjective

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9. The area of region bounded by the curve

$$y^2 = 4ax$$

and the straight line

$$x = 2a, \qquad a > 0$$

in the first quadrant is:

(A) $\frac{8a^2}{3}$ sq. units

(B) $\frac{8\sqrt{2}\,a^2}{3}$ sq. units

(C) $\frac{32a^2}{3}$ sq. units

(D) $\frac{64a^2}{3}$ sq. units

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10. Let X denote the number of heads in a simultaneous toss of three coins, then

$$P(0 < X < 3)$$

is:

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

(B) $\frac{3}{4}$

(C) $\frac{7}{8}$

(D) 1
