CUET 2026 May 30 Shift 1 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. Find the order and degree of the differential equation:

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

(A) Order 2, Degree 2

(B) Order 2, Degree 1

(C) Order 1, Degree 2

(D) Order 2, Degree $\frac{1}{2}$

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2. Find the angle between the vectors

$$\vec{a}=\hat{i}+\hat{j}-\hat{k}$$

and

$$\vec{b}=\hat{i}-\hat{j}+\hat{k}.$$

(A) 0°

(B) 90°

(C) $\cos^{-1}\left(-\frac{1}{3}\right)$

(D) $\cos^{-1}\left(\frac{1}{3}\right)$

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3. Minimize

$$Z = 2x + 3y$$

subject to

$$x + y \geq 5, \qquad x, y \geq 0.$$

(A) 10

(B) 15

(C) 0

(D) 12

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4. If

$$P(A) = 0.5, \qquad P(B) = 0.3, \qquad P(A \cap B) = 0.1,$$

find

$$P(A|B).$$

(A) 0.1

(B) 0.2

(C) $\frac{1}{3}$

(D) 0.5

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5. Find the rate of change of the area of a circle with respect to its radius r when

$$r = 3 \text{ cm}.$$

(A) 3π

(B) 6π

(C) 9π

(D) π

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6. Find the value of

$$\cos\left(\sin^{-1}\left(\frac{1}{2}\right)\right).$$

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

(B) $\frac{\sqrt{3}}{2}$

(C) 1

(D) 0

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7. Is

$$f(x) = x^2$$

continuous at $x = 0$?

(A) Yes

(B) No

(C) Only from left

(D) Only from right

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8. Find

$$\frac{dy}{dx}$$

if

$$y = \log(\sin x).$$

(A) $\tan x$

(B) $\cot x$

(C) $-\cot x$

(D) $\sec x$

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9. Calculate

$$\int e^x \, dx.$$

(A) $e^x + C$

(B) $e^{x+1} + C$

(C) $\frac{e^x}{x} + C$

(D) $xe^x + C$

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10. Find the distance from the point

$$(1, 1, 1)$$

to the plane

$$x + y + z = 3.$$

(A) 1

(B) 0

(C) $\sqrt{3}$

(D) 3
