

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 $\frac{1}{2}$

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

3. Minimize

$$Z = 2x + 3y$$

subject to

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

(A) 10

(B) 15

(C) 0

(D) 12

4. If

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

find

$$P(A|B).$$

(A) 0.1

(B) 0.2

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

(D) 0.5

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

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
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