

PART 1 - MATHEMATICS

Topic : Limits and derivatives

SECTION-B : (Maximum Marks : 4)

- This section contains **ONE** question.
- The answer to each question is a **NUMERICAL VALUE**.
- For each question, enter the correct numerical value of the answer (in decimal notation, truncated / rounded-off to the **SECOND DECIMAL PLACE**; e.g. 6.25, 7.00, -0.33, -.30, 30.27, -127.30) in the place designated to enter the answer.
- Answer to each question will be evaluated according to the following marking scheme :
 Full Marks : +4 If **ONLY** the correct answer is entered;
 Zero Marks : 0 In all other cases.

1. Let α and β be the real numbers such that

$$\lim_{x \rightarrow 0} \frac{1}{x^3} \left(\frac{\alpha}{2} \int_0^x \frac{1}{1-t^2} dt + \beta x \cos x \right) = 2.$$

Then the value of $\alpha + \beta$ is _____.

[JEE Advanced 2025 Paper 1]

Scan or tap for the
full solution



Space for Rough Work

**JEE ADVANCED LIMITS AND DERIVATIVES — LIMITS
USING SERIES EXPANSIONS AND L'HÔPITAL'S RULE (JEE)
— PYQS**

Test Pattern : JEE (Advanced)

ANSWER KEY

SECTION-B

Ques.	1												
Ans.	2.35 to 2.45												