

PART 1 - MATHEMATICS

Topic : Trigonometric functions

SECTION-1 : (Maximum Marks : 3)

- This section contains **ONE** question.
- Each question has **FOUR** options (A), (B), (C) and (D). **ONLY ONE** of these four options is the correct answer.
- For each question, choose the option corresponding to the correct answer.
- Answer to each question will be evaluated according to the following marking scheme :
Full Marks : +3 If **ONLY** the correct option is chosen;
Zero Marks : 0 If none of the options is chosen (i.e. the question is unanswered);
Negative Marks : -1 In all other cases.

1. Let $\frac{\pi}{2} < x < \pi$ be such that $\cot x = \frac{-5}{\sqrt{11}}$. Then

$$\left(\sin \frac{11x}{2}\right)(\sin 6x - \cos 6x) + \left(\cos \frac{11x}{2}\right)(\sin 6x + \cos 6x)$$

is equal to

(A) $\frac{\sqrt{11} - 1}{2\sqrt{3}}$

(B) $\frac{\sqrt{11} + 1}{2\sqrt{3}}$

(C) $\frac{\sqrt{11} + 1}{3\sqrt{2}}$

(D) $\frac{\sqrt{11} - 1}{3\sqrt{2}}$

[JEE Advanced 2024 Paper 1]

Scan or tap for the
full solution



Space for Rough Work

JEE ADVANCED TRIGONOMETRIC FUNCTIONS —
MULTIPLE AND SUB-MULTIPLE ANGLE FORMULAE —
PYQS

Test Pattern : JEE (Advanced)

ANSWER KEY

SECTION-1																											
Ques.	1																										
Ans.	B																										