

## PART 1 - MATHEMATICS

Topic : Inverse trigonometric functions

## SECTION-A : (Maximum Marks : 4)

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 : +4 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. The total number of real solutions of the equation

$$\theta = \tan^{-1}(2\tan \theta) - \frac{1}{2}\sin^{-1}\left(\frac{6\tan \theta}{9 + \tan^2 \theta}\right)$$

is

(Here, the inverse trigonometric functions  $\sin^{-1}x$  and  $\tan^{-1}x$  assume values in  $\left[-\frac{\pi}{2}, \frac{\pi}{2}\right]$

and  $\left(-\frac{\pi}{2}, \frac{\pi}{2}\right)$ , respectively.)

[JEE Advanced 2025 Paper 2]

(A) 1

(B) 2

(C) 3

(D) 5

Scan or tap for the  
full solution



Space for Rough Work

JEE ADVANCED INVERSE TRIGONOMETRIC  
FUNCTIONS — EQUATIONS INVOLVING INVERSE  
TRIGONOMETRIC FUNCTIONS — PYQS

Test Pattern : JEE (Advanced)

ANSWER KEY

| SECTION-A |   |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|-----------|---|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|
| Ques.     | 1 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Ans.      | C |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |