

Comprehensive Test Series-05

CHAPTER-2 (FORMULAE) Inverse – Trigonometric Functions

Time: 15 min

MM: 15

General Instructions:

- All Questions are compulsory.
 - Marks are given alongwith the questions individually.
 - Use of calculator is not permitted.
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1. (i) $\sin^{-1}(\sin \theta) = \theta$ for all _____
(ii) $\cos^{-1}(\cos \theta) = \theta$ for all _____
(iii) $\tan^{-1}(\tan \theta) = \theta$ for all _____
(iv) $\operatorname{cosec}^{-1}(\operatorname{cosec} \theta) = \theta$ for all _____
(v) $\sec^{-1}(\sec \theta) = \theta$ for all _____
(vi) $\cot^{-1}(\cot \theta) = \theta$ for all _____
2. (i) $\sin^{-1}(-x) =$ _____ for all $x \in [-1, 1]$
(ii) $\cos^{-1}(-x) =$ _____ for all $x \in [-1, 1]$
(iii) $\tan^{-1}(-x) =$ _____ for all $x \in \mathbb{R}$
(iv) $\operatorname{cosec}^{-1}(-x) =$ _____ for all $x \in (-\infty, -1] \cup [1, \infty)$
(v) $\sec^{-1}(-x) =$ _____ for all $x \in (-\infty, -1] \cup [1, \infty)$
(vi) $\cot^{-1}(-x) =$ _____ for all $x \in \mathbb{R}$
3. $\sin^{-1}\left(\frac{1}{x}\right) =$ _____ for all $x \in (-\infty, -1] \cup [1, \infty)$
 $\tan^{-1}\left(\frac{1}{x}\right) =$ _____ for all $x > 0$
4. (i) $\sin^{-1} x + \cos^{-1} x =$ _____ for all $x \in [-1, 1]$
(ii) $\tan^{-1} x + \cot^{-1} x =$ _____ for all $x \in \mathbb{R}$
5. $\tan^{-1} x + \tan^{-1} y =$ _____ $xy < 1$
 $\tan^{-1} x - \tan^{-1} y =$ _____ $xy > -1$
6. (i) $\sin^{-1} x + \sin^{-1} y =$ _____
(iv) $\cos^{-1} x - \cos^{-1} y =$ _____ .