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) $\text{cosec}^{-1}(\text{cosec}\,\theta)=\theta$ 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 $x\in R$

   (iv) $\text{cosec}^{-1}(-x)=$_____ 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 $x\in R$

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 $x\in R$

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) $\cos^{-1}x-\cos^{-1}y=$ _____ .