Name: _____	**Subject:** Mathematics	**Class:** 11th	**Time:** 80 minutes	Total Marks:	**40**
Chapter No.13	**MJDexpert.com**			Obtained marks	

Note: Please attempt any 10 short questions from Question 2. Also, attempt both parts of Question 3. Cutting and removal of any content is strictly prohibited.

Question.No.01: - Choose the correct answer. **(10x01=10)**

1.	If $\cos^{-1} x =$	$\cos^{-1} x$	$-\cos^{-1} x$	$\pi - \cos^{-1} x$	$\pi + \cos^{-1} x$
2.	If $\sin^{-1} 1 =$	$\frac{\pi}{2}$	$-\frac{\pi}{2}$	$\frac{\pi}{3}$	None of these
3.	If $\cos^{-1}\left(\frac{\sqrt{3}}{2}\right) =$	$\frac{\pi}{4}$	$\frac{\pi}{2}$	$\frac{\pi}{6}$	$\frac{\pi}{5}$
4.	Cos $(\cos^{-1} 1) =$	0	2	1	Undefined
5.	$tan^{-1}x \neq$	$\tan x$	$(\tan x)^{-1}$	X	None of these
6.	Range of the function y=sin x is	$\frac{\pi}{2} \leq x \leq \frac{\pi}{2}$	$-\frac{\pi}{2} \leq x \leq \frac{\pi}{2}$	$\frac{\pi}{2} \leq x \leq -\frac{\pi}{2}$	None of these
7.	$tan^{-1}\left(\frac{1}{\sqrt{3}}\right) =$	$\frac{\pi}{2}$	$\frac{3\pi}{2}$	$\frac{\pi}{6}$	$\frac{\pi}{4}$
8.	$\cos\ (\sin^{-1}\frac{1}{\sqrt{2}}) =$	2	$\frac{2}{\sqrt{3}}$	$\frac{1}{\sqrt{3}}$	$\frac{1}{\sqrt{2}}$
9.	$tan^{-1}A + tan^{-1}B =$	$tan^{-1}\frac{A+B}{1+AB}$	$tan^{-1}\frac{A-B}{1+AB}$	$tan^{-1}\frac{A+B}{1-AB}$	$tan^{-1}\frac{A-B}{1-AB}$
10.	The solution of $cosec\ \theta = 2$ is	$\frac{\pi}{2}, \frac{3\pi}{2}$	$\frac{5\pi}{2}, \frac{3\pi}{2}$	$\frac{\pi}{6}, \frac{5\pi}{6}$	$\frac{\pi}{3}, \frac{\pi}{2}$

Question.No.02: -Solve all parts. **(02x10=20)**

i.	Prove that	$\cos^{-1}\frac{4}{5} = \cot^{-1}\frac{4}{3}$
ii.	Find the value of expression	$cos(\sin^{-1}\frac{1}{\sqrt{2}})$
iii.	Prove that	$\tan^{-1}\frac{5}{12} = \sin^{-1}\frac{5}{13}$
iv.	Prove that	$\text{Cos}\ (\sin^{-1} x) = \sqrt{1-x^2}$
v.	Prove that	$\sin^{-1}(-x) = -\sin^{-1} x$
vi.	prove that	$2\cos^{-1}\frac{4}{5} = \sin^{-1}\frac{24}{25}$
vii.	Find the value of expression	$\tan(\sin^{-1}(-\frac{1}{2}))$
viii.	Show that	$\sin(2\cos^{-1} x) = 2x\sqrt{1-x^2}$
ix.	Show that	$\tan^{-1}\frac{1}{4} + \tan^{-1}\frac{1}{5} = \tan^{-1}\frac{9}{19}$
x.	Show that	$\tan(\sin^{-1} x) = \frac{x}{\sqrt{1-x^2}}$

Question.No.03: -Attempt any two parts: **(02x05=10)**

A.	Prove that	$\sin^{-1}\frac{77}{85} - \sin^{-1}\frac{3}{5} = \cos^{-1}\frac{15}{17}$
B.	Prove that	$\cos^{-1}(-x) = \pi - \cos^{-1} x$