

Name: _____	Subject: Mathematics	Class: 11 th	Time: 80 minutes	Total Marks: 40
Chapter No.10&14	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.	$\tan\left(\frac{3\pi}{2} + \theta\right) =$	$\cot\theta$	$\tan\theta$	$-\cot\theta$	$-\tan\theta$
2.	The value of $\cos 315^\circ$ is:	0	1	$\frac{\sqrt{3}}{2}$	$\frac{1}{\sqrt{2}}$
3.	If $\cos^{-1}\left(\frac{\sqrt{3}}{2}\right) =$	$\frac{\pi}{4}$	$\frac{\pi}{2}$	$\frac{\pi}{6}$	$\frac{\pi}{5}$
4.	The fundamental law of trigonometry is:	$\cos(\alpha + \beta)$	$\cos(\alpha - \beta)$	$\sin(\alpha + \beta)$	$\sin(\alpha - \beta)$
5.	If one acute angle of right triangle is 60° , then another acute angle is:	45°	145°	65°	30°
6.	$\tan(270 - \theta) =$	$\cot\theta$	$\tan\theta$	$-\cot\theta$	$-\tan\theta$
7.	Trigonometric function has solution.	0	1	Infinite	No solution
8.	If $\tan x = -1$ then general angle is:	$\left\{\frac{3\pi}{4} + n\pi\right\}$	$\left\{\frac{3\pi}{4} - n\pi\right\}$	$\left\{\frac{3\pi}{4} + 2n\pi\right\}$	$\left\{\frac{3\pi}{4} - 2n\pi\right\}$
9.	When we look an object below the horizontal ray, the angle formed is	Angle of elevation	Angle of depression	angle	$\tan^{-1} \frac{A-B}{1-AB}$
10.	The solution of $\operatorname{cosec} \theta = 2$ 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.	Show that $\cos\left(\frac{\pi}{2} - \theta\right) = \sin\theta$.
ii.	Prove that $\sqrt{\frac{1+\sin\alpha}{1-\sin\alpha}} = \frac{1+\sin\frac{\alpha}{2}}{1-\sin\frac{\alpha}{2}}$.
iii.	Show that $\cos\left(\frac{\pi}{2} - \theta\right) = \sin\theta$.
iv.	Find the value of $\cos 2\alpha$ if $\cos\alpha = \frac{3}{5}$.
v.	If α, β, γ are the angles of t triangle then prove that $\tan(\alpha + \beta) = -\tan\gamma$.
vi.	Find the solution of $\operatorname{cosec}\theta = 2$.
vii.	Solve the trigonometric equation $\cot^2\theta = \frac{1}{3}$.
viii.	Define reference angle.
ix.	Express as sum or difference $\cos 7\theta - \cos\theta$.
x.	Find the solution of $2\sin^2\theta - \sin\theta = 0$

Question.No.03: - (02x05=10)

A.	Prove that $\frac{\cos 8^\circ - \sin 8^\circ}{\cos 8^\circ + \sin 8^\circ} = \tan 37^\circ$
B.	Prove that $\frac{\sin^2(\pi + \theta)\tan\left(\frac{3\pi}{2} - \theta\right)}{\cot^2\left(\frac{3\pi}{2} - \theta\right)\cos^2(\pi - \theta)\operatorname{cosec}(2\pi - \theta)} = \cos\theta$