INTRODUCTION TO TRIGONOMETRY

1 MARK QUESTION

1) $9\sec^2 A - 9\tan^2 A =$ _____

a) 1 b) 9 c) 8 d) 0

2) $\frac{1+\tan^2 A}{1+\cot^2 A} =$ _____

a) $\sec^2 A$ b) -1 c) $\cot^2 A$ d) $\tan^2 A$

3) 1 - $\cos^2 A$ = _____

a) $\sin^2 A$ b) $\tan^2 A$ c) 1 - $\sin^2 A$ d) $\sec^2 A$

4) sin60°.cos30° + sin30°.cos60°= _____

a) 0 b) 1 c) 2 d) 4

5) sin2A = 2sinA is true only if, A = _____

a) 30° b) 45° c) 0° d) 60°

6) $\sec^2\theta - 1 =$ _____

a) $tan^2\theta$ b) $tan^2\theta + 1$ c) $cot^2\theta - 1$ d) $cos^2\theta$

One Mark questions:

1) If sinx = $\frac{1}{3}$ then, cosec x = _____

2)If cosθ = $\frac{24}{25}$ then, secθ = _____

3) If tan θ= $\frac{7}{24}$ then, cot θ= _____

4) If cosec x = $\frac{25}{15}$ then, sin x = _____

5) If sin A = $\frac{3}{5}$ and cos A=$\frac{4}{5}$ then, tan A= _____

6) $\frac{\sin 18^0}{\cos 72^0}$ = _____

7) $\frac{\tan 26^0}{\cot 64^0}$ = _____

8) $\cos 48^0 - \sin 42^0$ = _____

9) $\text{cosec } 31^0 - \sec 59^0$ = _____

10) $\tan 48^0 . \tan 42^0$ = _____

11) $\sin 60^0 . \cos 30^0 + \sin 30^0 . \cos 60^0$ = _____

12) $1 - \tan^2 45^0$ = _____

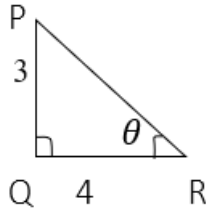
13) $1 + \tan^2 45^0$= _____

14) If $A=30^0$, then, sin3A = _____

2 MARK QUESTION

1) If θ is acute, then write all the trigonometric ratios with respect to θ.

2) If sin A = $\frac{3}{4}$then, calculate cos A and tan A.



3) If 15cot A = 8 then, calculate sin A and sec A.

4) If $\sec\theta = \frac{13}{12}$ then, Find the values of $\sin\theta$ and $\tan\theta$.

5) Find the value of: $2\tan^2 45^0 + \cos^2 30^0 - \sin^2 60^0$

6) Find the value of: $\frac{2\tan 30^0}{1+\tan^2 30^0}$

7) $\tan 2A = \cot(A-18^0)$ and 2A is acute, then find the value of A.

8) If $\tan A = \cot B$ then, prove that $A+B = 90^0$.

9) If $\sec 4A = \operatorname{cosec}(A-20^0)$ and 4A is acute, then find the value of A.

10) Find the value of: $\sin 25^0 . \cos 65^0 + \cos 25^0 . \sin 65^0$

11) Find the value of: $\tan^2 60^0 + 2\tan^2 45^0$

12) Find the value of: $\operatorname{cosec} 60^0 - \sec 45^0 + \cot 30^0$

3 MARK QUESTION

1) Prove that $(\operatorname{cosec}\theta - \cot\theta)^2 = \frac{1-\cos\theta}{1+\cos\theta}$

2) Prove that $\frac{\cos A}{1+\sin A} + \frac{1+\sin A}{\cos A} = 2\sec A$

3) Prove that $\sqrt{\frac{1+\sin A}{1-\sin A}} = \sec A + \tan A$

4) Prove that $(\sin A + \operatorname{cosec} A)^2 + (\cos A + \sec A)^2 = 7 + \tan^2 A + \cot^2 A$

5) Prove that $(\operatorname{cosec} A - \sin A)(\sec A - \cos A) = \frac{1}{\tan A + \cot A}$

6) Prove that $\sqrt{\frac{1+\cos A}{1-\cos A}} = \operatorname{cosec} A + \cot A$

7) Prove that $(1 + \cot A - \operatorname{cosec} A)(1 + \tan A + \sec A) = 2$

8) Prove that $\frac{\tan A - \sin A}{\tan A + \sin A} = \frac{\sec A - 1}{\sec A + 1}$