

07.08.19 EVERWIN VIDHYASHRAM Marks: 25
 STD: X PERIODIC ASSESSMENT- II Time:1hr15mins
 MATHS T.T

I. Answer the following: 4x1=4

- The value of $\sin(90^\circ - 72^\circ) = \underline{\hspace{2cm}}$.
- $\operatorname{Cosec}^2 A = \underline{\hspace{2cm}}$.
- State whether the following is true or false. Justify your answer: $\cot A$ is the product of \cot and A

4. The value of $\tan 60^\circ = \underline{\hspace{2cm}}$

II. Answer the following: 2x2=4

5. In $\triangle ABC$, right angled at B. $AB=7\text{cm}$, $BC=24\text{cm}$.

Determine $\sin A$ and $\cos A$

6. If $\tan A = \cot B$. Prove that $A+B=90^\circ$

III. Solve: 3x3=9

7. Prove the following: $(\operatorname{Cosec} \theta - \cot \theta)^2 = \frac{1 - \cos \theta}{1 + \cos \theta}$

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8. A tower stands vertically on the ground from a point on the ground. Which is 15m away from the foot of the tower. The angle of the elevation of the top of the tower is found to be 60° . Find the height of the tower.

9. If $\sin 3A = \cos(A-26^\circ)$ Where $3A$ is an acute angle, find the value of A .

IV. Solve: 4x2=8

10. Prove that: $\left(\frac{1 + \tan^2 A}{1 + \cot^2 A}\right) = \left(\frac{1 - \tan A}{1 - \cot A}\right)^2 = \tan^2 A$

11. Two ships are sailing in the sea on either side of the light-house. The angles of depression of two ships as observed from the top of the light house are 60° and 45° respectively. If the distance between the ships is

$200 \left(\frac{\sqrt{3} + 1}{\sqrt{3}}\right) \text{m}$ find the height of the light house.

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