BHARATH COACHING CENTRE

10th CBSE	Trigonometric	Total: 50
Maths	SA – 1	Time: 1.30 hrs

SECTION – A 5 x 1 = 5

1. If $\tan A = \frac{3}{4}$, then the value of $\sec A$ is
2. The value of the expression $\frac{\operatorname{cosec}\ (58^\circ + \theta) - \sec\ (32^\circ - \theta)}{\tan 45^\circ + \tan(45^\circ + \theta) - \cot(45^\circ - \theta)}$ is
3. The value of $\frac{tan^2\ 60^\circ - sin^2\ 30^\circ}{tan^2\ 45^\circ + cos^2\ 30^\circ}$ is
4. Given that $\tan \alpha = \sqrt{3}$ and $\tan \beta = \frac{1}{\sqrt{3}}$, then the value of $(\alpha + \beta)$ is
5. Given that $3\cot \theta = 4$, then $\left(\frac{5 \sin \theta - 3 \cos \theta}{5 \sin \theta + 3 \cos \theta}\right)$ is equal to

SECTION – B 5 x 2 = 10

6. In ΔPQR, right angled at Q, PQ = 4cm and RQ = 3 cm. find the values of sin P, sin R, sec P & sec R.
7. Find the value of x: $\sqrt{3} \sin x = \cos x$.
8. Prove that: $\frac{\cos 80^\circ}{\sin 10^\circ} + \cos 59^\circ cosec\ 31^\circ = 2$
9. $\frac{1 + \cos A}{\sin^2 A} = \frac{1}{1 - \cos A}$
10. If $\sin \theta = \frac{1}{\sqrt{2}}$, find all the other trigonometric ratios of angle θ.

SECTION – C 5 x 3 = 15

11. If $\sec A = \frac{17}{8}$, verify that $\frac{3 - 4sin^2 A}{4\ cos^2 A - 3} = \frac{3 - tan^2 A}{1 - 3\ tan^2 A}$.
12. In an acute angled triangle ABC, if tan (A + B – C) = 1 and sec (B + C - A) = 2, find the value of A, B and C
13. Evalute: $\frac{\cos 58^\circ}{\sin 32^\circ} + \frac{\sin 22^\circ}{\cos 68^\circ} - \frac{\cos 38^\circ cosec\ 52^\circ}{\tan 18^\circ \tan 35^\circ \tan 60^\circ \tan 72^\circ \tan 55^\circ}$
14. Prove that : $\frac{\sin \theta}{\cot \theta + cosec\ \theta} = 2 + \frac{\sin \theta}{\cot \theta - cosec\ \theta}$
15. If $\sec \theta + \tan \theta = p$, obtain the values of $\sec \theta$, $\tan \theta and \sin \theta\ in\ terms\ of\ p$.

SECTION – D 5 x 4 = 20

16. If $\tan \theta = \frac{20}{21}, show\ that\ \frac{1 - \sin \theta + \cos \theta}{1 + \sin \theta + \cos \theta} = \frac{3}{7}$
17. Prove that : $\frac{1}{(cosec\ x + \cot x)} - \frac{1}{\sin x} = \frac{1}{\sin x} - \frac{1}{(cosec\ x - \cot x)}$
18. If $\tan A = n\ tan\ B\ and \sin A = m\ sinB, prove\ that \cos^2 A = \frac{m^2 - 1}{n^2 - 1}$.
19. $\frac{\tan \theta}{1 - \cot \theta} + \frac{\cot \theta}{1 - \tan \theta} = 1 + \sec \theta\ coses\ \theta = 1 + tan\theta + cot\theta$.
20. $\frac{(1 + \cot A + \tan A)(\sin A - \cos A)}{sec^2 A - cosec^2\ A} = \sin^2 A \cos^2 A$

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