SELF ASSESSMENT TEST -5

CLASS 10+1

TRIGONOMETRY

1.Find the angle in degree (a) $\left(\frac{\pi}{8}\right)^c$ (b) $(6)^c$

2.The angles of triangle are in A.P. The number of degree in the least is to the number of radian in the greatest as 60 : π Find the angle in degree

3.Find in degree the angle between the hour hand and the minute hand of a clock at half past three.

4.If $\frac{\sin A}{\sin B}$ =p and $\frac{\cos A}{\cos B}$ =q find tanA and tanB

5. Prove that tan 65° = tan 25° + 2 tan 40°

6. If A – B = 45°, show that (1 + tanA) (1 + tanB) = 2 tanA

7. Prove that tan $\left(\frac{\pi}{4}+\theta\right)$ tan$\left(\frac{3\pi}{4}+\theta\right)$ = -1

8. Prove that tan $\left(\frac{13\pi}{12}\right)$ = 2 - $\sqrt{3}$

9.If tanA + tanB =a and cotA + cotB =b then prove that

Cot (A+B) = $\left(\frac{1}{a}-\frac{1}{b}\right)$.

10. Prove that cosA – sinA = $\sqrt{2}\cos\left(A+\frac{\pi}{4}\right)$

11.If tan(A+B) = p and tan (A- B) =q then prove tan2A = $\frac{p+q}{1-pq}$

12.If $\frac{\sin(A+B)}{\sin(A-B)}=\frac{a+b}{a-b}$, then show that $\frac{\tan A}{\tan B}=\frac{a}{b}$

13.Prove that : cos2A cos2B + $\sin^2(A-B)-\sin^2(A+B)$ = cos2(A +B)

14.If 2 tanB + cotB = tanA , prove that cotB = 2 tan (A-B)

15. If cos (A +B) sin (C + D) = cos (A – B) sin(C- D) , prove that

CotA cotB cot C = cot D

16. Prove that $\frac{\cos^2 33^\circ-\cos^2 57^\circ}{\sin^2\frac{21^\circ}{2}-\sin^2\frac{69^\circ}{2}}=-\sqrt{2}$

17.If $T_n=\sin^n\theta+\cos^n\theta$ prove that $2T_6-3T_4+1$ =0

18.Find the value of (a) sin(-1125°) (b) cos(-855°) (c) tan(-4530°).

19.Find x , x cot (90° +A) + tan(90° + A) sinA+ cosec(90° +A) =0

20.Find the value of cos(A+B) , sin(A-B) ,if cosA=4/5, cosB= 12/13

A, B lies in third quadrant.

21.Find the value of tan $\frac{13\pi}{12}$.

22.Prove that $\cos^2$ A + $\cos^2$ B -2cosA cosB cos(A+B) = $\sin^2$ (A+B).

23 Prove that $\frac{\sin 8A\cos A-\sin 6A\cos 3A}{\cos 2A\cos A-\sin 3A\sin 4A}=\tan 2A$