School Of Math
Maths Test
Trigonometry

Time : 1 hr 15 minutes | Class – XI | Maximum Marks: 40

Note:- *All questions are compulsory. Marks are written against each questions.*

Q1. Find the radius of the circle in which a central angle of 60° intercepts an arc of 37.4 cm in length. (1)

Q2. Show that : tan 315° cot (–405°) + cot 495°tan(–585°) = 2. (1)

Q3. Show that : tan 70° = 2tan 50° + tan 20°. (1)

Q4. Prove that $(\cos x+\cos y)^2+(\sin x+\sin y)^2=4\cos^2\left(\frac{x-y}{2}\right)$. (1)

Q5. In a circle of diameter 40 cm the length of a chord is 20 cm. Find the length of the minor arc of the chord. (1)

Q6. Find the angle in radian through which a pendulum swings if its length is 75 cm and the tip describes an arc of length 21 cm. ($\pi = 22/7$) (1)

Q7. If $\sin A=\frac{4}{5}$ and $\cos B=\frac{-5}{13}$, where $0<A<\frac{\pi}{2}; \frac{\pi}{2}<B<\pi$, find the value of cos (A-B) (4)

Q8. Prove the following identity: $\frac{\tan(45^\circ+\theta)}{\tan(45^\circ-\theta)}=\left(\frac{1+\tan\theta}{1-\tan\theta}\right)^2$ (4)

Q9. If $\tan 35^\circ = x$, prove that $\frac{\tan 145^\circ-\tan 125^\circ}{1+\tan 145^\circ\tan 125^\circ}=\frac{1-x^2}{2x}$. (4)

Q10. Find the general solution of the equation: $2\sin^2 x+\sqrt{3}\cos x+1=0$ (4)

Q11. Prove that: $\cos 6x=32\cos^6 x-48\cos^4 x+18\cos^2 x-1$ (4)

Q12. Show that $\tan 4A=\frac{4\tan A(1-\tan^2 A)}{1-6\tan^2 A+\tan^4 A}$ (4)

Q13 Show that : $\sin A\sin(B-C)+\sin B\sin(C-A)+\sin C\sin(A-B)=0.$ (4)

Q14 If $\tan\theta=\frac{a}{b}$; prove that $b\cos 2\theta+a\sin 2\theta=b.$ (6)