| Q. 1 | If $\tan A=\sqrt{3}$, then what is $\tan 2 \mathrm{~A}$ ? |
| :---: | :---: |
| Q. 2 | Solve : $2 \cos ^{2} \mathrm{x}+3 \sin \mathrm{x}=0$ |
| Q. 3 | Evaluate : $\sin \left(40^{\circ}+\theta\right) \cos \left(10^{\circ}+\theta\right)-\cos \left(40^{\circ}+\theta\right) \sin \left(10^{\circ}+\theta\right)$ |
| Q. 4 | Prove that $\cot x \cot 2 x-\cot 2 x \cot 3 x-\cot 3 x \cot x=1$. (3 marks) |
| Q. 5 | Find the value of $\sin 150^{\circ}+\cos 300^{\circ}$. |
| Q. 6 | If in two circles, arcs of the same length subtend angles $75^{\circ}$ and $120^{\circ}$ at the centre, find the ratio of their radii. |
| Q. 7 | If in two circles, arcs of same length, subtend angles $120^{\circ}$ and $150^{\circ}$ at the centre, find the ratio of their radii. (3 marks) |
| Q. 8 | Write the value of $\tan 15^{\circ}$. |
| Q. 9 | Prove that: $(\cos x+\cos y)^{2}+(\sin x-\sin y)^{2}=4 \cos ^{2} \frac{x+y}{2}$ |
| Q. 10 | Find the value of $\cos 55^{\circ}+\cos 125^{\circ}+\cos 300^{\circ}$. |
| Q. 11 | Find the value of $\sin 15^{\circ}$. |
| Q. 12 | Prove that: $(\sin 3 x+\sin x) \sin x+(\cos 3 x-\cos x) \cos x=0 . \quad$ (3 marks) |
| Q. 13 | A wheel makes 360 revolutions in one minute. Through how many radians does it turn in one second? (1 mark) |
| Q. 14 | Prove that $\frac{\boldsymbol{\operatorname { c o s }} 19^{\circ}-\boldsymbol{\operatorname { s i n }} 19^{\circ}}{\boldsymbol{\operatorname { c o s }} 19^{\circ}+\boldsymbol{\operatorname { s i n }} 19^{\circ}}=\cot 74^{\circ}$ <br> (3 marks) |
| Q. 15 | If $\cot 2 A=\tan (n-2) A$, then what is $A$ ? |
| Q. 16 | Solve $\cos 2 \theta-\cos \theta=0 \quad$ (3 marks) |
| Q. 17 | Write the general solution of $\cos x=\frac{1}{2}$ |
| Q. 18 | Prove that $\frac{\sec 8 \theta-1}{\sec 4 \theta-1}=\frac{\tan 8 \theta}{\tan 2 \theta}$ |
| Q. 19 | Prove that $\cos ^{2} A+\cos ^{2} B-2 \cos A \cos B \cos (A+B)=\sin ^{2}(A+B)$ |
| Q. 20 | Find the principal solutions of the equation $\tan x=\sqrt{3}$. |

