**2022**

**MATHEMATICS-I**

*Full Marks: 100*

Time: Three hours

***The figures in the margin indicate full marks for the questions.***

| A. | Multiple Choice Questions | 2 x 10=20 |
|----|---------------------------|-----------|
| 1. | For what value $\theta$, $\sin\theta$ is definable | |
| | a. | -2 | |
| | b. | 2 | |
| | c. | $\frac{1}{2}$ | |
| | d. | 3 | |
| 2. | Value of $\frac{\tan(-\theta)}{\sec(-\theta)}$ is | |
| | a. | $\sin\theta$ | |
| | b. | $-\sin\theta$ | |
| | c. | $\cos\theta$ | |
| | d. | $-\cos\theta$ | |
| 3. | Value of $\sin\sin 300°$ is | |
| | a. | $\frac{\sqrt{3}}{2}$ | |
| | b. | $-\frac{\sqrt{3}}{2}$ | |
| | c. | $\frac{1}{2}$ | |
| | d. | $\frac{1}{\sqrt{2}}$ | |
| 4. | Value of $\cos\left(\frac{4\pi}{2}-\theta\right)$ is | |
| | a. | $-\cos\theta$ | |
| | b. | $\cos\theta$ | |
| | c. | $\sin\theta$ | |
| | d. | $-\sin\theta$ | |
| 5. | Equation $\cos\theta = -1$ has a principal solution | |