Course Code: 1BSCCS5
Course: Mathematics-I
Credit: 4
Last Submission Date: April 30 (for January Session)
October 31, (for July session)

Max. Marks:-30
Min. Marks:-10

Note:-attempt all questions.

Que1. Determine the Eigen value and Eigenvectors of the given matrix

$$A=\begin{bmatrix} 6 & -2 & 2 \\ -2 & 3 & -1 \\ 2 & -1 & 3 \end{bmatrix}$$

Que2. Find the rools of the equation $x^2 - 3x^2 - 16x + 48 = 0$, when the sum of two rools is zero.

Que3. Find all values of $(1+\sqrt[i]{3})^{10} + (1-\sqrt[i]{3})^{10}$

Que4. Find the sum of the series

$$1+\frac{cos\theta}{cos\theta}+\frac{cos2\theta}{cos^2\theta}+\frac{cos3\theta}{cos^3\theta}+\text{-------}$$

Que5. Show that (Q,+) is an abelion group, where Q is the set of rational numbers.

Que6. State and prove Lagrange's theorem.

Que7. Define Homomorphism with example and state and prove second theorem on Homomorphism.

Que8. Show that (I,+,.) is a Ring, where I is the set of integers.

Que9. Find the equation of the cone whose veries is (5,4,3) and base curve $3x^2+2y^2 = 6$, $Y+Z=0$

Que10. Find the equation of the cylinc whose generators are parallel to the

Whose generators are parallel to the

Line $\frac{x}{1}=\frac{y}{2}=\frac{z}{3}$ and passing theory

The curve $x^2+y^2 = 16, y=0$