ST. JOSEPH’S COLLEGE FOR WOMEN (AUTONOMOUS), VISAKHAPATNAM

III SEMESTER **MULTI-DISCIPLINARY COURSE** TIME: 2Hrs/Week

BM 3001 (2) **BASIC MATHEMATICS** Marks:50

w.e.f AK 2023-2024 (Admitted Batch) **SYLLABUS**

**COURSE OUTCOMES:** After successful completion of this course, the student will be able to

**CO1:** understand the concept of sets and relations

**CO2:** know the method of rationalisation in surds

**CO3:** understand Co-ordinate system and Locus

**CO4:** find the Point of intersection of two straight lines

**CO5:** find the Rank of a matrix.

**Course Content**:

**UNIT – I:** **ALGEBRA**

**SETS AND RELATIONS:** Sets – Finite and Infinite sets – Equality of sets – Subsets – Power set – Universal set – Union and Intersection of sets – Relations – Equivalence relations –Examples.

**Surds:** Surd – Pure and Mixed surds – Similar surds – Monomial surds – Binomial Surds –

Rationalisation.

**LOGARITHMS:** Definition – Properties of Logarithms – Common Logarithms.

**UNIT – II:** **CO-ORDINATE GEOMETRY**

**CO-ORDINATE SYSTEM:** Distance between two points – Division formula – Centroid – Areas of Triangles and Quadrilaterals.

**Locus:** Definition of Locus – Equation of Locus

**STRAIGHT LINE:** Different forms – Reduction of general equation into various forms –Point of intersection of two straight lines

**UNIT – III:** **MATRICES**

**MATRICES:** Types of matrices – Examples – Addition of Matrices – Subtraction of Matrices – Scalar multiple of a matrix – Multiplication of matrices – Transpose of a matrix and

determinants – Minors and Cofactors – Adjoint of a matrix – Inverse of a matrix – Rank of a

matrix – definition and examples.

**ACTIVITIES:** Seminar/ Quiz/ Assignments/ Problem Solving Sessions.

**REFERENCE BOOKS:**

1. Basic Abstract Algebra by P.B.Bhattacharya, S.K.Jain, S.R.Nagpaul, Cambridge

University Press.

2. Co-ordinate Geometry by M.L.Khanna, Jai Prakash Nath Publications.

3. A Text book of Matrices by Shanti Narayan & PK Mittal, S.Chand Publications.

\*\* \*\* \*\*