Semester I

Paper 103: Fundamentals of Mathematics

Unit 1: Elementary Mathematics **15 Lectures**

1.1 Trigonometric functions, trigonometric ratios of standard angles, allied angles, compound angels

1.2 Cartesian rectangular coordinate system, distance formula, section formula, straight lines, slopes, types of straight lines.

1.3 Application in solving life science problems - Solutions of simultaneous linear equations, quadratic equations, progressions, permutations and combinations

Unit 2: Matrices & Determinants **15 Lectures**

2.1 Introduction to Matrix, Transpose of a Matrix

2.2 Elementary row and column operations ofMatrix

2.3 Determinants Properties of determinants (Without Proof) Rank of a Matrix

2.4 MinorandCo-factors Inverse of a matrix.

Unit 3: Numerical Method **15 Lectures**

3.1 Gauss Jordan, Jacobi and Gauss sidle methods, Newton-Raphson method.

3.2 Transcendentalfunction- Logarithmic and exponential functions,

3.3 Application in solving Biological scienceproblems

Unit 4: Vector Algebra **15 Lectures**

4.1 Definition, Types of Vectors, two- and three-dimensional vectors,

4.2 Scalar (dot) and Vector(cross) product

4.3 Application in solving Biological science problems

References:

1. T.B: SCHAUM Series books of calculus, vectors, statistics & matrices

2. Pharmaceutical Mathematics with Application to Pharmacy – PharmMed Press, A Unit ofBSP Books Pvt Ltd, 4-4-309/316, Giriraj Lane, Sultan Bazar, Hyderabad – 500 095-Panchaksharappa Gowda D.H.

3. Introduction to Mathematics for life scientist – Publisher- Springer (India) Pvt. Ltd. EdwardBatschelet