ST. JOSEPH'S COLLEGE (AUTONOMOUS) BENGALURU-27



Re-accredited with **'A++' GRADE with 3.79/4 CGPA** by NAAC Recognized by UGC as College of Excellence

DEPARTMENT OF MATHEMATICS

Syllabus for Bachelor of Science (Basic/Hons.)

Under National Education Policy

For Batch 2021 (Onwards)

Name of the Degree Program: B.Sc. Discipline Core: Mathematics Total Credits for the Program: 176 (till 8 semesters) Starting year of implementation: 2021-22

MTOE -2: Quantitative Methods for Competitive Examinations				
Teaching Hours : 3 Hours/Week	Credits: 3			
Total Teaching Hours: 42 Hours	Max.Marks:100 (S.A60+I.A40)			

Course Learning Outcomes: This course will enable the students to

- Demonstrate procedural fluency with real number arithmetic operations and use those operations to represent real-world scenarios
- Solve linear equations, graph and interpret linear models, and read and apply formulas
- Demonstrate a basic understanding of displays of univariate data graphically, including appropriate labelling
- Applications of simple formulae to various elementary concepts and provide acquaintance to shortcut methods
- Improve and learn basic mathematics skills
- Familiarise themselves with mathematics required for various competitive examinations like MAT, CAT, GMAT, GRE, UPSC, SSE, Bank Exams etc.

UNIT-I: Arithmetic

Decimals – Exponents and Roots – Fractions – Integers – Number Series – Percent – Profit & Loss – Ratio & Proportion : Rule of Mixture – Problems on Ages – Partnership – Simple interest – Compound interest – Solved problems. 14 Hours

UNIT-II: Algebra and Data Analysis

Functions – Graphs of Functions, Operations with Algebraic Expressions, Rules of Exponents, Solving Linear Equations – Solving Linear Inequalities – Solving Quadratic Equations – Permutation & Combinations – Solved problems.

Counting Methods, Data Interpretation Examples, Distributions of Data, Random Variables and Probability Distributions – Graphical Methods for Describing Data– Solved problems. 14 Hours

UNIT-III:

Geometry

Circles – Lines and Angles – Polygons – Quadrilaterals – Three-Dimensional Figures – Triangles: Congruency of Triangles, Similarity of Triangles – Coordinate Geometry– Solved problems. 14 Hours

Reference Books:

- 1. R.S. Aggarwal, Quantitative Aptitude for Competitive Examinations (Fully Solved),
- 2. Ira K. Wolf, Sharon Weiner Green. *Barron's New GRE*, 19th Edition, Barron's Educational Series, 2011.
- 3. H S Hall, S R Knight, *Higher Algebra*, Arihant Publications.
- 4. Abhijit Guha, *Quantitative Aptitude for Competitive Examination*, McGraw Hill Education Series, 5th Edition.
- 5. Rakesh Yadav, Advanced Maths for General Competitions, KD Publication (2016)

Blueprint

	Unit-I	Unit-II	Unit-III	Number of Questions to be answered	Total
MCQ (1 Marks)	20	20	20	60/60	60