**B.COM.**

**SEMESTER II**

**Commercial Arithmetic – II (CC 8)**

**(100 marks - 60 Lectures)**

**Unit I The Straight Line (25marks - 12 hours)**

* Rectangular Cartesian Co-ordinate System
* Distance formula, Section formula (Simple problems only)
* Slope and intercepts of a straight line
* Equations of lines parallel to the axes.
* Equations of lines in slope point form, two point form, slope intercept form, two intercept form
* General equation of a line, Parallel and perpendicular lines
* Intersection of lines
* Graphs of linear equations and inequalities
* Graphical solution of Linear Programming Problems with two variables only

**Unit 2 Calculus I**

1. **Relations and Functions (5marks - 4 Lectures)**

* Ordered pair
* Cartesian product
* Relation, Function – Domain, Co-domain, Range.

1. **Limits and Continuity (5marks - 4 Lectures)**

* Definition
* Operations of finding limits
* Algebra of limits
* Concept of continuity and examples

1. **Derivatives and their Applications (25 marks - 12 Lectures)**

* Concept of derivatives
* Standard forms
* Algebra of derivatives
* Derivatives of composite functions
* Higher order derivatives
* Applications – Total revenue function, Total cost function, Elasticity of demand and supply

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* Increasing and decreasing function/sign of derivative (economic applications)
* Maxima and Minima (economic applications)

**Unit III Calculus II**

1. **Integration and its Applications (15marks - 12 Lectures)**

* Definition
* Standard forms xn, ex, ax, 1/x
* Integral of f(x) + g(x) and kf(x)
* Integral of (ax+b)n, eax+b, kax+b, 1/ax+b
* Applications – Total revenue function, Total cost function
* Definite integration
* Area under a curve (formula only)
* Consumer’s Surplus and Producer’s Surplus

1. **Partial Derivatives (5marks - 4 Lectures)**

* Definition
* Partial derivatives of first and second order
* Economic applications: Demand function, Utility function, Production function

**Unit IV Commercial Mathematics (20marks - 12 Lectures)**

* Ratio
* Proportion
* Percentage
* Discount – Trade Discount, Cash discount, Discount and profit.

**References**

1. Joshi N. and Chitale S.G., *A New Approach To Mathematical Techniques* , Sheth Publishers
2. Vaidya M.L., Deshpande A.V., Kumtha A.P., *Elementary Business Mathematics*, Vipul Prakashan
3. DikshitAmarnath, Jain Jinendra Kumar, *Business Mathematics*, Himalaya Publishing House
4. GoelAjayand GoelAlka, *Mathematics and Statistics*, Taxmann Allied Services
5. Vaidya M.V., KumthaA. P., *Business Mathematics*, Vipul Prakashan
6. ShahS., *Business Mathematics(for ICWAI International Course),* New Central Book Agency
7. Abranches, M.E, *Mathematical Techniques*, Gracias Print Arts.