

## CC - 210 FUNDAMENTAL STATISTICS - II

**Objective :** - Students should be able to apply basic mathematics and statistics in different sectors of economics and finance.

### 1. Application of Differentiation : [25%]

Definition of second order derivative, maximum and minimum value of a function and its application in business (cost, revenue and profit related numerical problems), Application of derivatives in economics (elasticity of demand and supply, M.R., A.R., M.C. and A.C. and its related examples)

### 2. Integration and its Application : [25%]

Definition of definite integration, Rules of integration (constant, addition and subtraction), Standard forms of integration ( $x^n$ ,  $e^{(ax+b)}$ ,  $a^x$ ,  $\frac{1}{x}$ ,  $(ax+b)^n$ ,  $\frac{1}{(ax+b)}$ ) Simple examples based on these results, Definition of definite integrations, Its simple application related to M.R., M.C. and profit function only.

### 3. Co-ordinate Geometry : [25%]

Definition of Slope, Intercept, Conditions for parallel and Perpendicular lines. Equations of a straight line in the following forms

$$(i) y = mx + c \quad (ii) y - y_1 = m(x - x_1) \quad (iii) \frac{x}{a} + \frac{y}{b} = 1 \quad (iv) \frac{y - y_1}{y_1 - y_2} = \frac{x - x_1}{x_1 - x_2}$$

Simple illustrative examples.

### 4. Arithmetic Progression and Geometric Progression : [25%]

Introduction of arithmetic progression and geometric progression, sum of series in arithmetic progression, arithmetic mean, geometric mean, sum of series in geometric progression. Its application based examples.

#### Reference Books :

1. Kapoor V.K.: Business Mathematics, Sultan Chand & Sons, New Delhi.
2. Sancheti & Kapoor: Business Statistics, Sultan Chand & Sons, New Delhi.

3. Sancheti & Kapoor: Business Mathematics, Sultan Chand &-Sons, New Delhi.
4. Mukhopadhyay, P. Mathematical Statistics, New Central Book Agency, Calcutta.
5. Trivedi and Trivedi: Business Mathematics, Pearson India Ltd. New Delhi.