

## **SYLLABUS FOR JECA - 2015**

### **Paper - 1: Mathematics (100 marks):**

- (i) Analytical Geometry** : Cartesian and polar coordinate; Straight line; Circle; Ellipse; Parabola; Hyperbola; Translation & Rotation of axes.
  
- (ii) Algebra** : Complex number, De Moivre's theorem, Solution of linear equations, Determinants, Matrices, Summation of signal series, Addition of vectors, Scalar and Vector products, Inequation, Sets and elements, Universal set, Empty set, Subsets, Venn diagram, Union and intersection of sets, Complements, Algebra of sets, Finite sets, Class of sets, Partitions, Cross product, Group, Ring and Field.
  
- (iii) Calculus**: Limit, Continuity, Differentiation; Maxima & minima; Taylor & Maclaruin's Series: Definite and indefinite integrals, First ana second order differential equation; Functions of several variables; Partial differentiation.
  
- (iv) Probability & Statistics** : Permutation, Combination; Probability; Probability distribution; Mean; Median; Mode; Standard Deviation; Correlation coefficient.

### **Paper - II : Aptitude test (100 marks) :**

- i) Reasoning, (ii) Problem Solving, (iii) Quantitative Comparison,
  
- (iv) Discrete Quantitative Analysis & (v) Data interpretation.