

OVERVIEW THE COURSE OF MATHEMATICS-III (TEXTILE)

Subject code 5931

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Aims:

To make understand the basic concept and techniques of composition and resolution of vectors and computing the resultant of vectors.

To enable to use the knowledge of come in finding the girder of a bridge, cable of a suspension bridge and maximum height of an arch.

To provide ability to apply railway the knowledge of differential calculus in solving problem like slope, gradient of a curve, velocity, acceleration, rate of flow of liquid etc.

To enable to apply the process of integration in solving practical problems like calculation of area of a regular figure in two dimensions and volume of regular solids of different shapes.

Short Description:

Vector:	Addition and subtraction, dot and cross product.
Co-ordinate Geometry:	Co-ordinates of a point, locus and its equation, straight lines, circles and conic.
Differential Calculus:	Function and limit of a function, differentiation with the help of limit, differentiation of functions, geometrical interpretation of $\frac{dy}{dx}$, successive differentiating and Leibnitz theorem, partial differentiation.
Integral Calculus:	Fundamental integrals, integration by substitutions, integration by parts, integration by partial fraction, define integral

Detail Description:

1. Apply the theorems of vector algebra.
2. Apply the concept of dot product and cross of vectors.
3. Apply the concept of co-ordinates to find lengths and areas.
4. Apply the concept of locus.
5. Apply the equation of straight lines in calculating various parameter.
6. Apply the equation of circle, tangent and normal in solving problems.
7. Understand conic or conic sections.

Differential Calculus

8. Understand the concept of function and limits.

9. Understand differential co-efficient and differentiating.
10. Apply the concept of differentiating.
11. Apply the concept of geometrical meaning of $\frac{dy}{dx}$
12. Use Leibnitz's theorem to solve the problems of successive differentiation.
13. Understand partial differentiation.
14. Apply the fundamental indefinite integrals in solving problems.
15. Apply the concept of definite integrals.