



# Govt. Science College, Jabalpur

**B.Sc. 3<sup>rd</sup> year**

**Mathematics**

**Numerical Methods and Scientific Computation  
(Group A Paper I)**

**Course Learning Outcomes (CLO)**

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- ❖ Understand numerical methods to find the solution of a system of linear equations.
- ❖ Compute interpolation value for real data.
- ❖ Find quadrature by using various numerical methods.
- ❖ Solve system of linear equation by using various numerical techniques.
- ❖ Obtain solutions of ordinary differential equations by using numerical methods.





# Govt. Science College, Jabalpur

**B.Sc. 3<sup>rd</sup> year**

**Mathematics**

**Elements of discrete Mathematics  
(Group A Paper II)**

**Course Learning Outcomes (CLO)**

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- ❖ Apply the Boolean algebra, switching circuits and their applications.
- ❖ Minimize the Boolean Function using karnaugh Map.
- ❖ Understand the lattices and their types.
- ❖ Graphs, their types and its applications in study of shortest path algorithms.
- ❖ Test whether two given graphs are isomorphic.
- ❖ Understand the Eulerian and hamiltonian graphs.
- ❖ Represent graphs using adjacency and incidence matrices.





# Govt. Science College, Jabalpur

**B.Sc. 3<sup>rd</sup> year**

**Mathematics**

**Probability and Statistics**

**(Group B Paper I)**

## Course Learning Outcomes (CLO)

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- ❖ Describe and calculate the mean deviation, standard deviation, range, quartiles and percentiles.
- ❖ Understand and use the terminology of probability.
- ❖ Determine whether two events are mutually exclusive and independent.
- ❖ Calculate probabilities using the addition and multiplication rules.
- ❖ Recognize and understand discrete and continuous probability distribution function, binomial, uniform and exponential probability distribution.
- ❖ Calculate and interpret the correlation coefficient.
- ❖ Understand the basic concepts of linear regression and correlation.
- ❖ Interpret the Student's  $t$  probability distribution, chi-square goodness-of-fit,  $f$  and  $Z$  test.





# Govt. Science College, Jabalpur

**B.Sc. 3<sup>rd</sup> year**

**Mathematics**

**Integral Transformation  
(Group B Paper II)**

**Course Learning Outcomes (CLO)**

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- ❖ Understanding about Laplace transform and its properties.
- ❖ Solve ordinary differential equations using Laplace transform.
- ❖ Familiarize with Fourier transform of function, relation between Laplace and Fourier transform.
- ❖ Explain Parseval's identity and application of Fourier transform to boundary value problems.
- ❖ Apply the concepts of the course in real life problems.

