

Final Exam Topics

1. Old Material

First Order Equations

- a. Separation
- b. Linear equations
- c. Exactness
- d. Bernoulli Equations

Second Order Equations

- a. Reduction of Order
- b. Constant Coefficient using Undetermined Coefficients/Annihilators
- c. Variation of Parameters
- d. Euler-Cauchy Equations

2. Laplace Transforms (use of tables allowed)

- a. Computation of Laplace transforms.
- b. Computation of inverse Laplace transforms.
- c. Solving Equations using Laplace transforms.

A Table will be attached to the Final. You need to be able to use all formulas.

You must be able to manipulate Heaviside and Dirac Functions.

3. Series Solutions - Expanded around $x=0$.

- a. Power Series (0 is an ordinary point)
- b. Method of Frobenius (0 is a regular singular point)

You will be asked to give the coefficients up to a certain power or the number of non-zero terms.

NO ELECTRONIC DEVICES IN THE FINAL