

# Applications of Laplace Transform in Solving Problems on Electrical Circuits

<sup>1</sup>Rakhee Oka (M.Sc. Mathematics, SET, B.Ed.)

<sup>2</sup>Mrs. Pranjal Jog (ME, Research Scholar, Career Point University, Kota)

Assistant Professor, Department of Mathematics, Dr. Babasaheb Ambedkar Technological University, Lonere, India<sup>1</sup>

Assistant Professor, Department of Electronics and Telecommunication

Pimpri Chinchwad College of Engineering, Nigdi, Pune, India<sup>2</sup>

**Abstract:** *Electrical engineering is a subject that depends heavily on the study of electrical circuits, and this paper shows how effective the Laplace Transform is at solving circuit-related problems. Laplace transforms are more important in many fields than electrical circuits, such as science, technology, electrical and communication engineering, and quantum physics. This work aims to provide a solid foundational grasp of Laplace transforms by highlighting important ideas and fundamental uses. The Laplace transform is a multifaceted mathematical method that comes in very handy when solving linear differential equations, particularly when dealing with initial value issues. Laplace transforms ordinary linear differential equations into algebraic ones, making problem-solving more streamlined and effective. This is one of the reasons why it is widely used in many scientific and technical fields.*

**Keywords:** Laplace transform, Electrical Circuits, Linear differential equations, Multifaceted Mathematical Method