Analysis-2

Course Outcome:

1. Analyze and evaluate the concept of continuous functions using the sequential criterion of continuity and identify the points of discontinuity in a given function.
2. Apply Bolzano's theorem to determine the existence of zeros of continuous functions on closed intervals.
3. Identify and analyze the set of discontinuities of monotone functions and understand their behavior at points of discontinuity.
4. Evaluate the concept of uniform continuity and apply the nonuniform continuity criterion to determine the continuity of functions.
5. Understand the concept of differentiability of a function and analyze the algebra of differentiable functions to solve problems involving derivatives.
6. Identify and analyze the relative extrema of functions and apply Rolle’s theorem to find points where the derivative of a function is equal to zero.
7. Apply the Mean Value Theorems to analyze the behavior of functions on an interval and understand the intermediate value property of derivatives.
8. Analyze functions using Darboux's theorem to determine the existence of derivatives and study the properties of functions in various intervals.