

Determine the price a non-dividend paying European (both call and put) option using explicit, implicit and Crank-Nicolson implicit method with the following data:

$$S(0) = 50, K = 50, T = 1, r = 8\%, \sigma = 30\%.$$

Now determine the price using the closed form solutions of European options. Tabulate the values of the European options at $t = 0, 0.25, 0.50, 0.75, 0.95$ (for all the three methods), along with the closed form solution. What are your observations ?

Submission Deadline: 12th August 2025, 11:59 PM