Question —— assigned:

1. Give an example of an explicit method, and one example of an implicit method. Explain all notations.

2. Explain the differences between stability of an IVP and stability of a numerical scheme.

3. Consider the numerical scheme:

   $w_0 = \alpha_0$, $w_1 = \alpha_1$, $w_2 = \alpha_2$,

   $w_{j+1} = 0.25w_j - w_{j-1} + 0.25w_{j-2} + \Delta t F(t_j, t_{j-1}, t_{j-2}, w_j, w_{j-1}, t_{j-2}), \ j = 3 \ldots N$

   Is this scheme stable ? Show your work.