$$\mathbf{P} = \begin{bmatrix} -0.4747i & 0.4747i & 0.3077 & 0.3077 \\ 0.1067i & -0.1067i & 0.6846 & 0.6846 \\ 0.8524 & 0.8524 & 0.2709i & -0.2709i \\ -0.1916 & -0.1916 & 0.6027i & -0.6027i \end{bmatrix}.$$

In order to uncouple the system of differential equations, we transform the problem according to (recall that $\mathbf{A}$ is non-symmetric with distinct eigenvalues)

$$\bar{\mathbf{x}}(t) = \mathbf{P}\mathbf{y}(t).$$

With respect to $\mathbf{y}(t)$, the solution is

$$y_1(t) = c_1 e^{1.7958it}, y_2(t) = c_2 e^{-1.7958it}, y_3(t) = c_3 e^{0.8805it}, y_4(t) = c_4 e^{-0.8805it}.$$