Chapter 5

Q1. For the multi-bay portal frame as shown in Figure below, calculate the displacements $x_1$ and $x_2$ when subjected to El-Centro, 1940 (N-S component) earthquake ground motion for the following cases:
Case (i) Considering the same excitation at all supports (uniform excitation)
Case (ii) Considering multi-support excitations with a time delay of 3 s between supports
Assume percentage of critical damping as 4 %, $k/m = 100$ and all members are inextensible and EI values same for all members.