Obtain the steady-state outputs $x_1(t)$ and $x_2(t)$

1) Free Body Diagram

$$m_1 \ddot{x}_1 = -kx_1 - k(x_1-x_2) - b(x_1-x_2) + p(t)$$

$$m_2 \ddot{x}_2 + b(x_2-x_1) + k(x_2-x_1) = p(t)$$

$$m_2 \ddot{x}_2 = -k(x_2-x_1) - b(x_2-x_1)$$

$$m_2 \ddot{x}_2 + b(x_2-x_1) + k(x_2-x_1) = 0$$

The equations of motion for forced clamped vibration can be rewritten as

$$m_1 \ddot{x}_1 + b\dot{x}_1 + 2kx_1 = b\dot{x}_2 + kx_2 + p(t)$$

$$m_2 \ddot{x}_2 + b\dot{x}_2 + kx_2 = b\dot{x}_1 + kx_1$$

By assuming the initial conditions zero and taking the