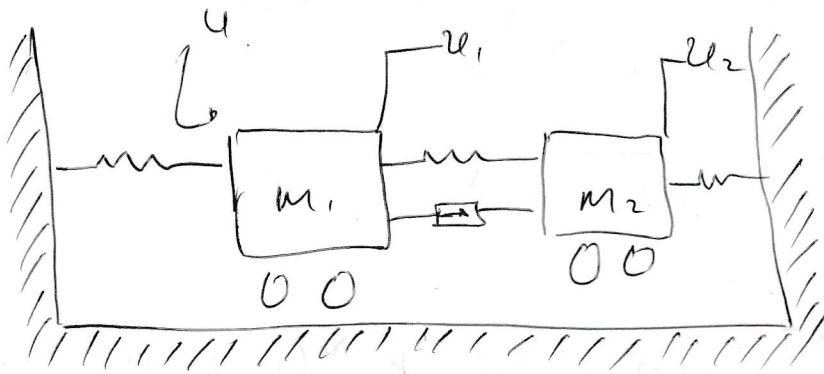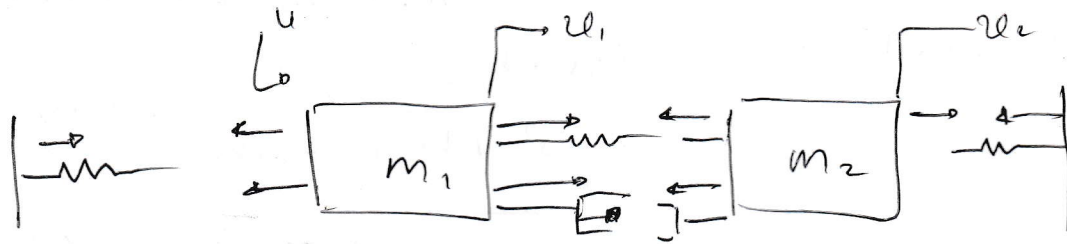Nama : Ahmad Fauzi Ilahi

NIM : 03051181722001

gambar 3 - 4.

DBB = 0

$$\Rightarrow U = m_1 \ddot{u}_1 + k_1 u_1 + k_2 (u_1 - u_2) + b(\dot{u}_1 - \dot{u}_2)$$

$$m_1 \ddot{u}_1 = -k_1 u_1 - k_2(u_1 - u_2) - b(\dot{u}_1 - \dot{u}_2) + U$$

$$m_1 \ddot{u}_1 = -k_1 u_1 - k_2 u_1 - k_2 u_2 - b\dot{u}_1 - b\dot{u}_2 + U$$

$$m_1 \ddot{u}_1 + k_1 u_1 + k_2 u_1 + b\dot{u}_1 = k_2 u_2 + b\dot{u}_2 + U$$

$$m_1 \ddot{u}_1 + b\dot{u}_1 + (k_1 + k_2) u_1 = k_2 u_2 + b\dot{u}_2 + U$$

menggunakan transformasi Laplace.

$$m_1 s^2 X_1(s) + bs X_1(s) + (k_1 + k_2) X_1(s) = k_2 X_2(s) + bs X_2(s) + U(s)$$

$$[m_1 s^2 + bs + (k_1 + k_2)] X_1(s) = (k_2 + bs). X_2(s) + U(s) \quad \ldots \ldots (1)$$

$$\Rightarrow m_2 \ddot{u}_2 + k_3 u_2 + k_2 (u_2 - u_1) + b(\dot{u}_2 - \dot{u}_1) = 0$$

$$m_2 \ddot{u}_2 = -k_3 u_2 - k_2 (u_2 - u_1) - b(\dot{u}_2 - \dot{u}_1) +$$

$$m_2 \ddot{u}_2 + k_3 u_2 + k_2 u_2 + b\dot{u}_2 = k_2 u_1 + b\dot{u}_1$$

$$m_2 \ddot{u}_2 + (k_3 + k_2) u_2 + b\dot{u}_2 = k_2 u_1 + b\dot{u}_1$$

menggunakan transformasi Laplace.

$$m_2 s^2 X_2(s) + (k_3 + k_2) X_2(s) + bs X_2(s) = k_2 X_1(s) + bs X_1(s)$$

$$[m_2 s^2 + bs + (k_3 + k_2)] X_2(s) = (k_2 + bs) X_1(s) \quad - \ldots \ldots (2)$$