



$$\frac{1}{SC} = \frac{1}{S(100m)} = \frac{10}{S}$$

$$SL = S20 = 20S$$

$$Vg = \frac{600}{S}$$

$$\frac{V\phi - \frac{600}{S}}{10} + \frac{V\phi - V_0}{20S} + \frac{V\phi}{\frac{10}{S}} = 0$$

$$\frac{V\phi}{10} + \frac{600}{S} + \frac{V\phi - V_0}{20S} + \frac{SV\phi}{10} = 0$$

$$2V\phi S + V\phi - V_0 + 2S^2V\phi = 1200$$

$$V\phi(2s^2 + 2s + 1) - V_0 = 1200 \quad (1)$$

$$\frac{V_0 - V\phi}{20S} + \frac{V_0}{140} + \frac{V_0}{4} = 0$$

$$7V_0 - 7V\phi + V_0S + 35sV\phi = 0$$

$$V_0(7+s) = V\phi(7-35s)$$

$$V\phi = \frac{7+s}{7-35s} V_0 \quad (2)$$

$$\left(\frac{7+s}{7-35s} V_0\right)(2s^2 + 2s + 1) - V_0 = 1200$$

$$V_0(7+s)(2s^2 + 2s + 1) - V_0(7-35s) = 1200(7-35s)$$

$$(14s^2 + 14s + s + 2s^3 + 2s^2 + s)V_0 - (7-35s)V_0 = 1200(7-35s)$$

$$(2s^3 + 16s^2 + 50s)V_0 = 1200(7-35s)$$

$$V_0(s) = \frac{4200(1-5s)}{S(s^2 + 8s + 25)}$$

$$\frac{A}{S} + \frac{B}{(s+4-3j)} + \frac{C}{(s+4+3j)}$$

$$A = \frac{4200(1-5s_0)}{0+0+25}$$

$$A = 168$$

$$B = \frac{4200(1-5s)}{s(s+4+3j)}$$

$$= (-84 + j3612)$$

$$B = 3612.98 \angle 91.33^\circ$$

$$C = 3612.98 \angle -91.33^\circ$$