$$\therefore -(V_{out}(s) + V(0)) = \frac{V_e(R_2 + SCR_2R_3)}{R_1 + R_3}$$

$$V_{out}(s) - V(0) = \frac{V_e(s)R_2}{R_1+R_3} + \frac{SCR_2R_3}{R_1+R_3} V_e(s)$$

$$V_{out}(s) = \frac{R_2}{R_1+R_3} V_e(s) + \frac{R_2}{R_1+R_3} R_2 CS(V_e(s)) + V_0$$

Inverse laplace:

$$V_{out} = \frac{R_2}{R_1+R_3} V_e + \frac{R_2}{R_1+R_3} R_3 C \frac{dV_e}{dt} + V_0$$

$$\boxed{V_{out} = G_p V_e + G_p G_D \frac{dV_e}{dt} + V_0}$$

where, $G_p = R_2/R_1+R_3$ $\quad G_D = R_3C$