8.1

e, s, c, and p denote the concentrations of E, S, ES, and P.

Four equations for the rate of changes of E, S, ES, and P are shown as follows:

$$\frac{\mathrm{ds}}{\mathrm{dt}} = -k_1 se + k_2 c \quad (1)$$

$$\frac{\mathrm{dc}}{\mathrm{dt}} = k_1 se - k_2 c - k_3 c \quad (2)$$

$$\frac{\mathrm{de}}{\mathrm{dt}} = -k_1 se + k_2 c + k_3 c \quad (3)$$

$$\frac{\mathrm{dp}}{\mathrm{dt}} = k_3 c \quad (4)$$