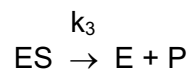
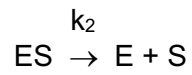
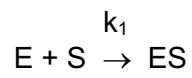
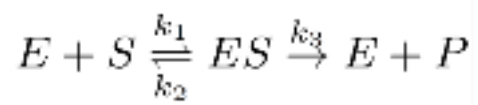


Question 2

8.1)



According to the law of mass action,

$$\frac{d[E]}{dt} = (k_2 + k_3)[ES] - k_1[E][S]$$

$$\frac{d[S]}{dt} = k_2[ES] - k_1[E][S]$$

$$\frac{d[ES]}{dt} = k_1[E][S] - (k_2 + k_3)[ES]$$

$$\frac{d[P]}{dt} = k_3[ES]$$