Answer to Q2

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1

Four equations for the rate of changes of the four species:

$$\frac{dE}{dt} = -V_f + V_b + V3$$

$$\frac{dS}{dt} = -V_f + V_b$$

$$\frac{dE_s}{dt} = V_f - V_b - V3$$

$$\frac{dP}{dt} = V3$$

where,

$$V_f = k_1 ES$$
$$V_b = k_2 E_s$$
$$V_3 = k_3 E_s$$

2

The result is shown in Figure 1. The code is attached in folder *Answer to Q2*.

3

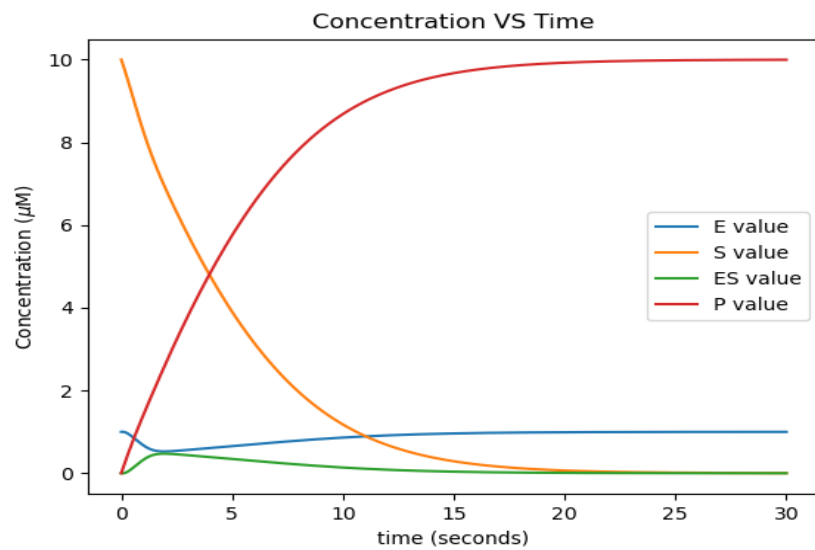The maximum value of V_m is 1.1837. The plot is shown in Figure 2.
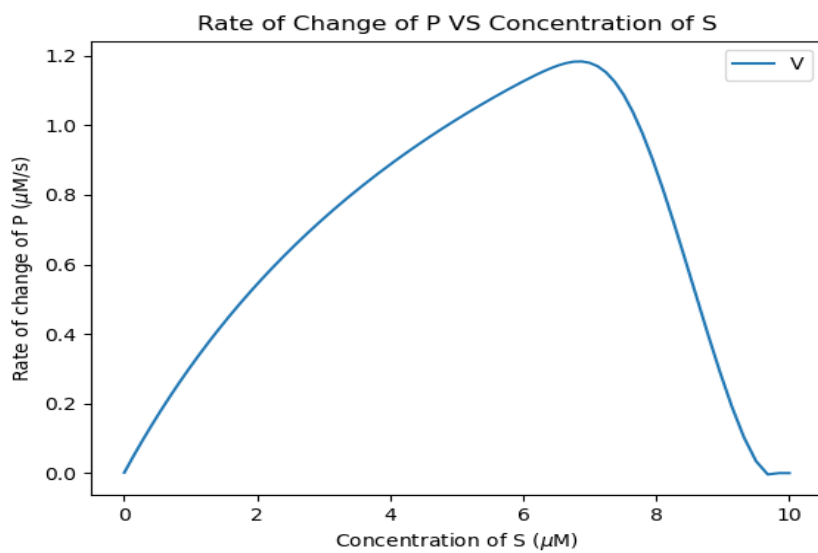
Figure 1: Plot of concentration time.

Figure 2: Plot of VS.