**INSON ORGANIZIMIGA DORI DARMON TA’SIRI HARAKATINI MATEMATIK MODELI VA DASTURIY KOMPLEKSINI YARATISH**

import numpy as np

from scipy.integrate import odeint

import matplotlib.pyplot as plt

from matplotlib.widgets import TextBox

# Parameters

a=str(input('dori vositasining nomini kiriting'))

x0=float(input('dori vositasining boshlangich miqdori co= '))

k1=float(input('oshqozondan qonga surilish foizi k1='))

k2=float(input('inson tanadan chiqib ketish foizi k2='))

t = 0

tstart = 0

tstop = 25

increment = 1

N = 25

#t = np.arange(tstart,tstop+1,increment)

#Alternative Approach

n = np.linspace(tstart, 24, 25)

t = np.linspace(tstart, tstop, 400)

f=x0\*np.exp(-k1\*t)

x = x0\*k1/(k1-k2)\*(np.exp(-k2\*t)-np.exp(-k1\*t))

print('dori konsentratsiyasining organizmdagi maximal qiymati= ',max(x))

print('organizmda qolgan minimum qiymati=',min(x))

fig, ax=plt.subplots(figsize=(10,5))

plt.plot(t,f)

plt.plot(t,x)

plt.xticks(n)

plt.title([a,' dori vositasining tanada harakatlanishining grafigi'])

plt.xlabel('Vaqt\n')

plt.ylabel('Dori konsentratsiyasi mgramm')

plt.grid()

plt.axis([0, 25, 0, x0])

plt.legend(["oshqozonda so'rilishi","qonga so'rilishi"])

plt.show()