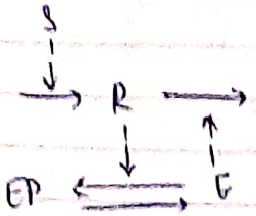
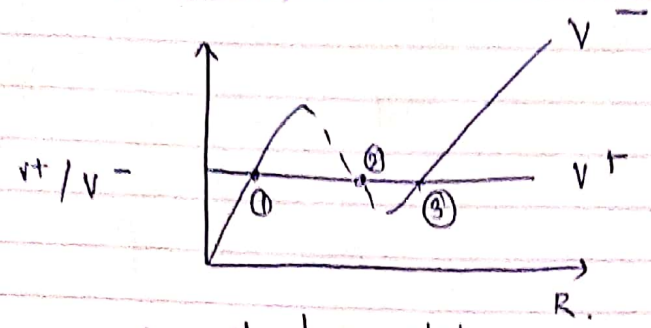
Systems Biology

Final Quiz

2012113011
SHREEYA

1)



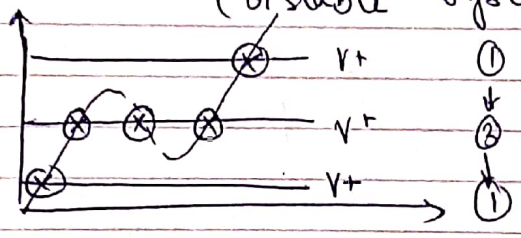


3 steady states.

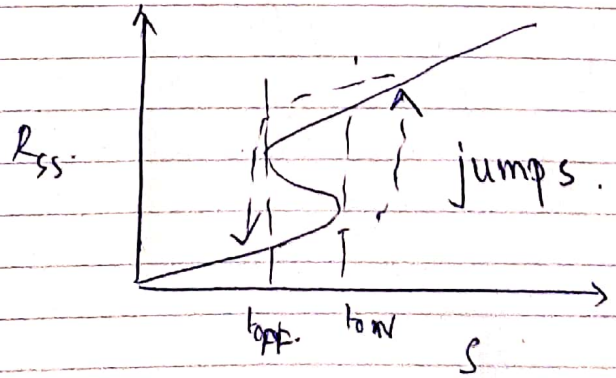
Since $V^+ = k_s S$. $\Rightarrow \propto$ on Signal

Steady states ① → ③ → ①

(Bistable System



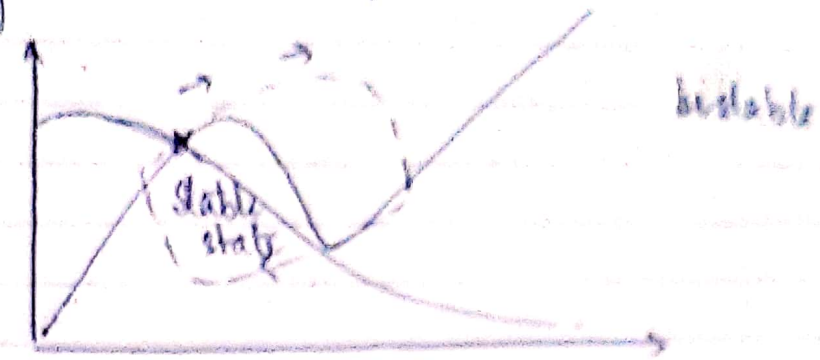
Signal response curve.



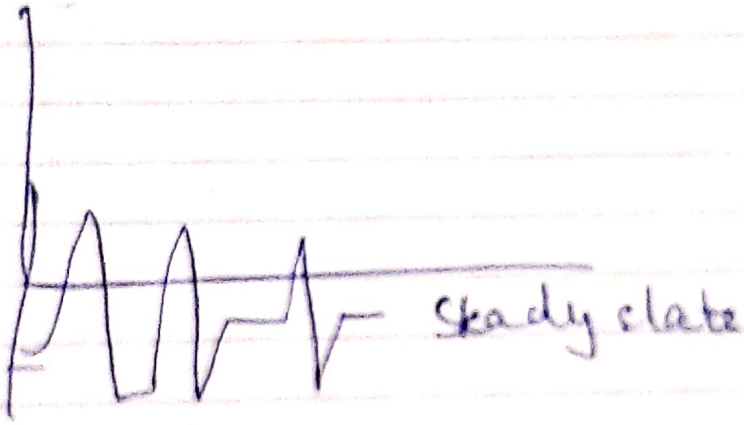
from ① steady state after t_{ON} jumps to higher s.s

4) If Excitable System blw x & y

Phase plot



(Neuron firing is excitable system)



2)

$$\frac{d[X]}{dt} = k_1[A] - k_2[B][X]$$

(a)

① $$\frac{d[X]}{dt} = k_1[A]$$

② $$\frac{d[Y]}{dt} = k_2[X][B]$$

③ $$\frac{d[X]}{dt} = 3k_3[X]^2[Y]$$

④ $$\frac{d[X]}{dt} = -k_4[X]$$