Mehendi Hasan B.SC.(H) Physics 2230248

To Solve First Order Differential Equation by RK2 Method and compare it with Exact Solution and Inbuilt Function.

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Enter Initial value of X: *0*

Enter Value of Y at Initial value of X: *1*

Enter Step Size: *0.01*

Enter last value of interval: *10*

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To Plot Newton's cooling law ODE by RK2 method, Exact solution & Inbuilt solver

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Newton's Law of Cooling

Temperature is in Degree Celsius and time is in secons

Enter initial Temperature of Object: *100*
Enter Surrounding temperature: *10*
Enter time from t=0, at which temperature of Object to be calculated: *100*

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To Plot Radioactive Decay ODE by RK2 method, Exact solution & Inbuilt solver.

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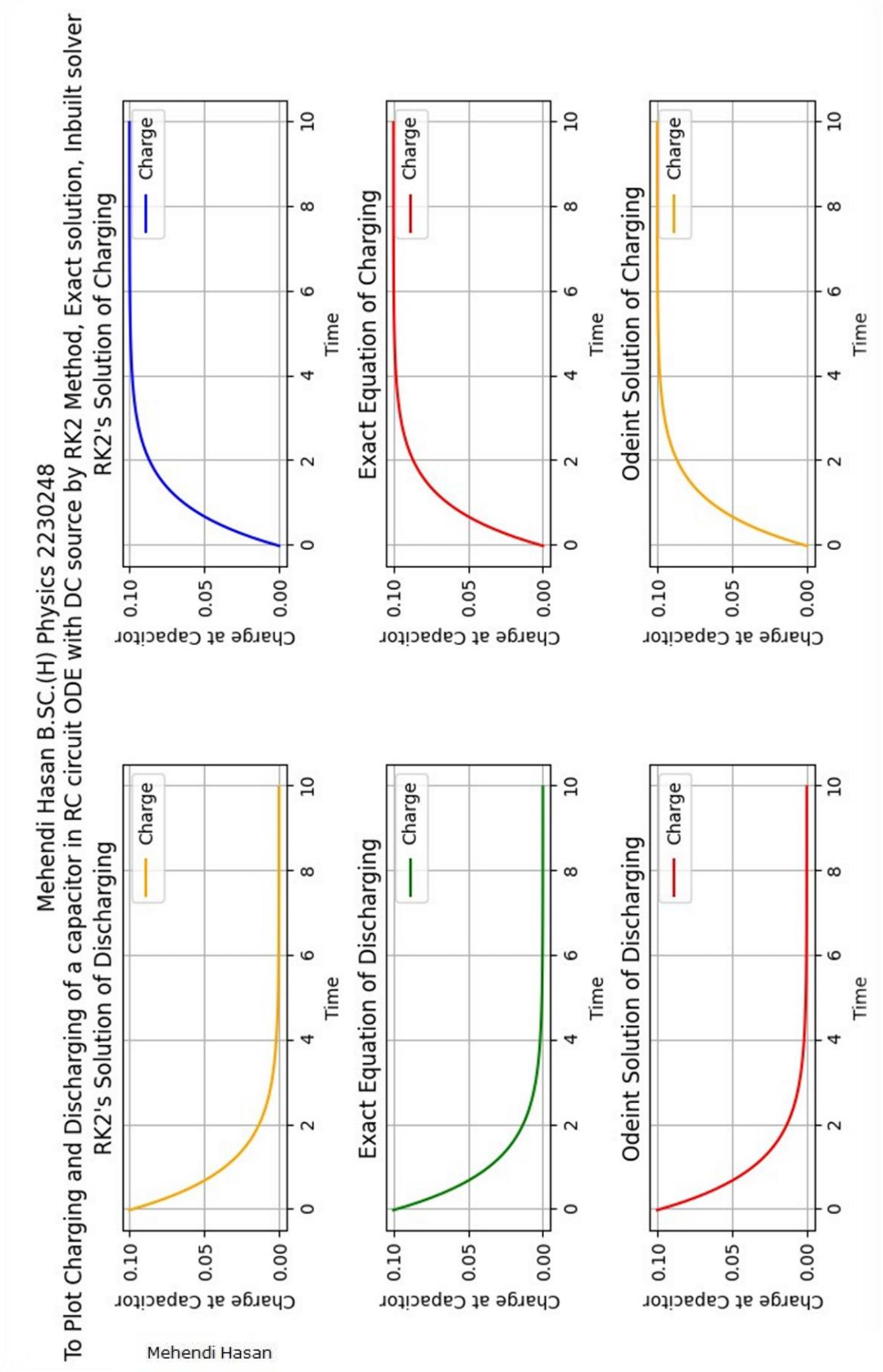
Radioactive Decay

Time is in Seconds

Enter Number of Parent Atoms at t=0: *1000*
Enter time instant at which Remaining of Parent Atoms to be calculated: *100*
Enter Radioactive Decay constant value: *1*



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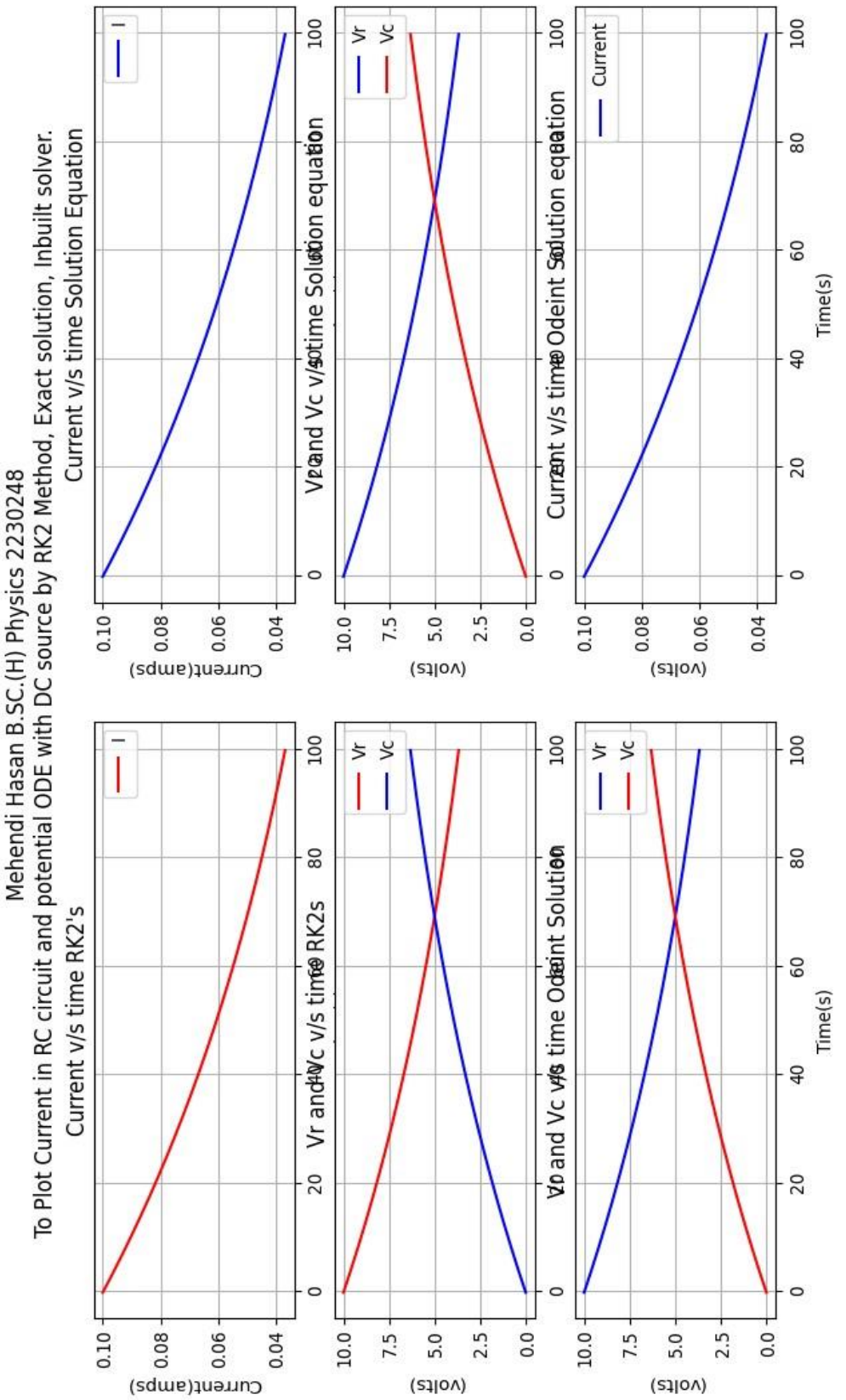
RC Circuit Charging and Discharging of Capacitor

Capacitance is in Farad, resistance is in ohm,time is in second,charge in coulomb,voltage in volts.

Enter Capacitance of Capacitor: *0.01*
Enter EMF of Battery: *10*
Enter Resistance of Resistor: *100*
Enter time instant at which charge on capacitor to be calculated: *10*



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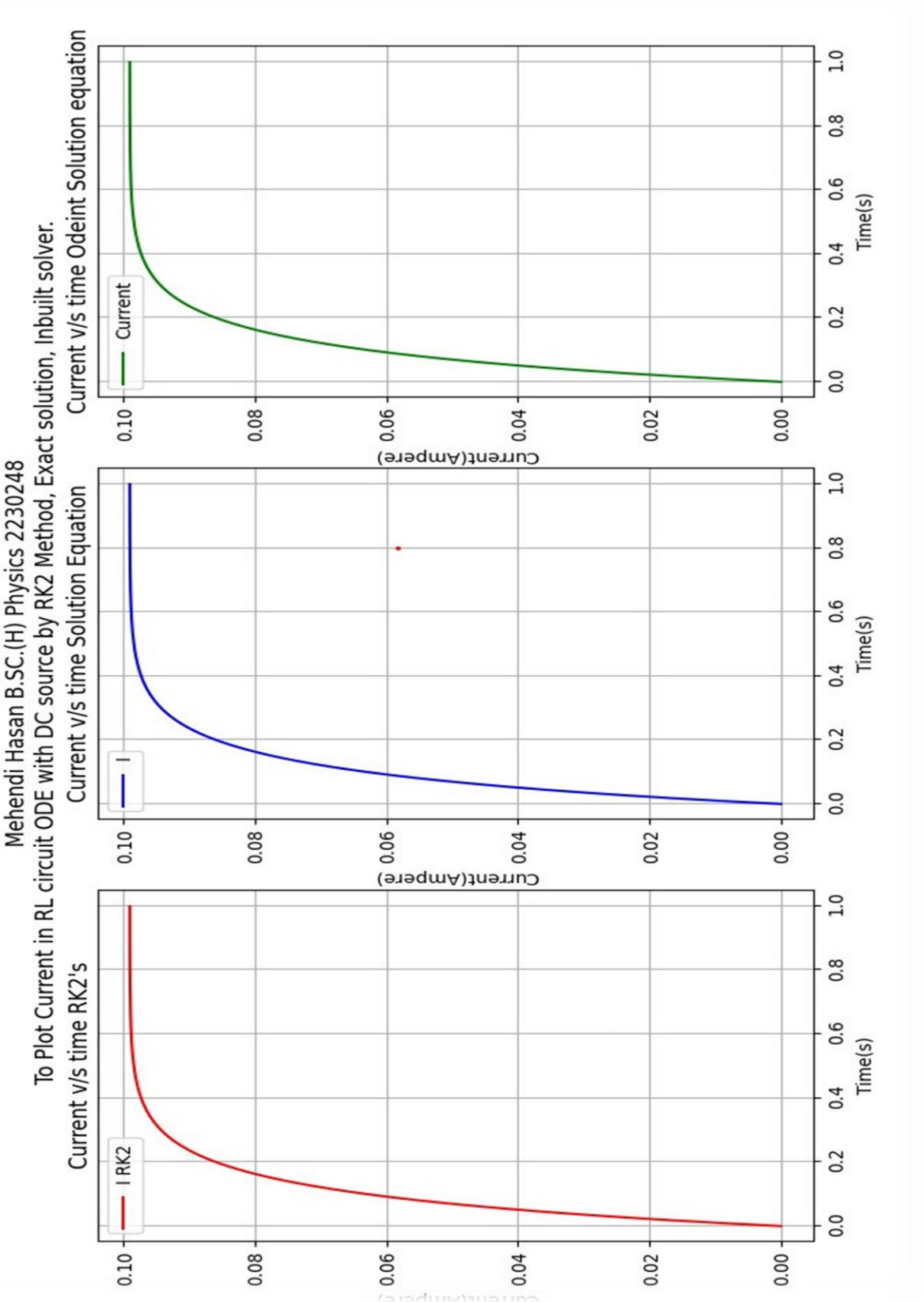
RC Circuit

Capacitance is in Farad, resistance is in ohm,time is in second,charge in coulomb,voltage in volts.

Enter the value of resistance in ohms:*100*
Enter the value of capacitance in farads:*1*
Enter the value of EMF in volts:*10*
Enter time instant at which current to be measured:*100*



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Variation of curent with time in RL Circuit

Resistance is in ohm,time is in second,Inductance in henry,voltage in volts.

Enter Inductance of Inductor: *10*
Enter EMF of Battery: *10*
Enter Resistance of Resistor: *101*
Enter time instant at which Current through inductor to be calculated: *1*