

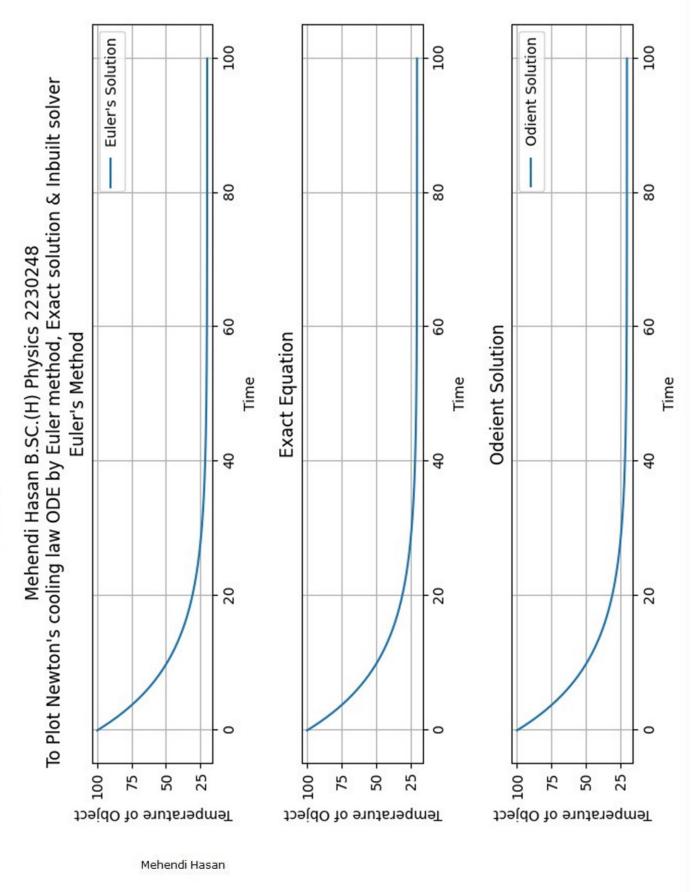
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Enter Initial value of X: 0

Enter Value of Y at Initial value of X: 1

Enter Step Size: 0.001

Enter last value of interval: 10



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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: 20

Enter time from t=0, at which temperature of Object to be calculated: 100

Odeint Solution **Euler's Solution Exact Equation Solution** 10 10 10 Mehendi Hasan B.SC.(H) Physics 2230248 To Plot Radioactive Decay ODE by Euler method, Exact solution & Inbuilt solver. ∞ 8 ∞ Time (Second) Time (Second) Time (Second) 10000 100001 100001 2500 2000 2000 2500 0 7500 2000 2500 0 7500 7500 No. of parent Atoms No. of parent Atoms No. of parent Atoms

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Radioactive Decay

Time is in Seconds

Enter Number of Parent Atoms at t=0: 10000Enter time instant at which Remaining of Parent Atoms to be calculated: 10

Enter Radioactive Decay constant value: 1

To Plot Charging and Discharging of a capacitor in RC circuit ODE with DC source by Euler Method, Exact solution, Inbuilt solver Charge Charge Charge 10 19 10 ∞ **Euler's Solution of Charging** Exact Equation of Charging Odeint Solution of Charging Time Time Time Mehendi Hasan B.SC.(H) Physics 2230248 0.04 0.02 0.00 0.04 0.02 0.00 0.04 0.02 0.00 Charge at Capacitor Charge at Capacitor Charge at Capacitor Charge Charge Charge 10 10 10 **Euler's Solution of Discharging** Odeint Solution of Discharging **Exact Equation of Discharging** œ Time Time Time 0.04 0.02 0.00 0.04 0.02 0.00 0.04 0.02 0.00 Charge at Capacitor Charge at Capacitor Charge at Capacitor

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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: 5

Enter Resistance of Resistor: 100

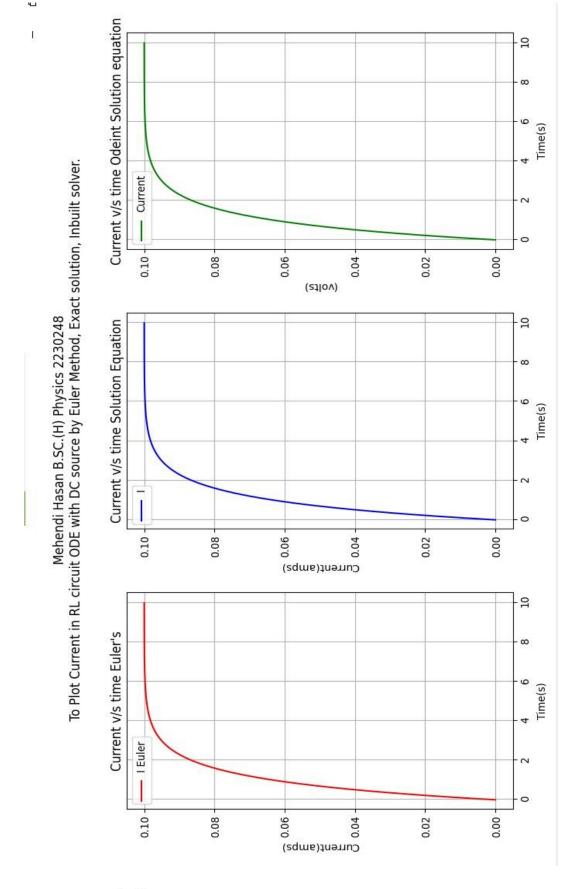
Enter time instant at which charge on capacitor to be calculated: 10

To Plot Current in RC circuit and potential ODE with DC source by Euler Method, Exact solution, Inbuilt solver. 10 10 10 3 Current Current v/s time Odeint Solution equation Vr and Vc v/s time Solution equation Current v/s time Solution Equation ∞ ∞ ∞ Time(s) Time(s) Time(s) Mehendi Hasan B.SC.(H) Physics 2230248 ò 0.04 0.02 0.00 7 0.04 0.02 0.00 (volts) (volts) Current(amps) 10 10 10 3 3 Vr and Vc v/s time Odeint Solution ω ∞ ∞ Vr and Vc v/s time Eulers Current v/s time Euler's Time(s) Time(s) Time(s) (volts) (volts) 0.00 0.04 0.02 Current(amps) Mehendi Hasan 2230248

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:0.01
Enter the value of EMF in volts:5
Enter time instant at which current to be measured:10

RC Circuit



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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: 100 Enter EMF of Battery: 10 Enter Resistance of Resistor: 100

Enter time instant at which Current through inductor to be calculated: 10