**EXPERIMENT-**

1. OBJECTIVES:
2. Write a Matlab program to find Motor Power, torque, speed and Battery energy requirement for EV parameters are mentioned below over FUDS drive cycle:
   1. Electric 2W
      1. Mass=180
      2. Cd=1
      3. Frontal area=0.6
      4. µrr = 0.015 (Radial Ply Tyre)
      5. Tyre radius = 0.28
      6. Gear ratio = 2
      7. Efficiency of motor= 0.80
      8. Transmission efficiency=95%
      9. Power requirement for accessories= 50 Watt
   2. Electric 3W
      1. Mass=600
      2. Cd=0.45
      3. Frontal area=1.6
      4. µrr = 0.015 (Radial Ply Tyre)
      5. Tyre radius = 0.2
      6. Gear ratio = 5
      7. Efficiency of motor= 0.80
      8. Transmission efficiency=95%
      9. Power requirement for accessories= 200 Watt
   3. Electric 4W
      1. Mass=1500
      2. Cd=0.32
      3. Frontal area=2.3
      4. µrr = 0.015 (Radial Ply Tyre)
      5. Tyre radius = 0.3
      6. Gear ratio = 8
      7. Efficiency of motor= 0.80
      8. Transmission efficiency=95%
      9. Power requirement for accessories= 500 Watt
3. Plot speed, acceleration and distance *w.r.t.* time with top speed in title as well
4. Plot motor power, torque and speed *w.r.t.* time with Peak values in title as well
5. Plot Energy required *w.r.t.* time with total energy required in title as well
6. SOFTWARE REQUIRED
   1. Python \_\_\_\_\_\_\_\_
   2. Google Colab/Spider/Jypyter
7. PROCEDURE
   1. Open Python Notebook  
      Open new .py-file
   2. Type the program
   3. Save in current directory
   4. Compile and Run the program
   5. For the output see command window\ Figure window
8. PROGRAM/FLOWCHART
9. OUTPUT





