

performance of Speed control Dc chopper fed dc drive and Ac chopper fed ac drive.

i. To observe the effects speeds produced with the variation of torque and Duty Ratio in the above mentioned Chopper using Matlab

## **Tools Required:**

Software :

MATLAB/Simulink.

System requirements : Minimum 4 GB RAM, i5 Processor.

## **Procedure**

Construct the Simulink model as per the circuit diagrams shown in various figures. Use pulse generator to trigger the SCRs.

2. Refer to the aim and connect the required measurement units. Use scope to view the waveforms of speed and display to view the rms and average values.
3. Configure all the components with the corresponding values at 50 Hz.
4. Configure simulation by using powergui block, stiff solver and required time.
5. Run the simulation and note the waveforms across various elements for a specific value of Duty Ratio
6. Vary the Duty Ratio, note the change in speed and tabulate them.

7. Draw the waveforms and graphs.

**I)Dc chopper fed dc drive.**

**Model**

Duty ratio=25%,torque=18.75

Experiment\_10 \* - Simulink academic use

SIMULATION DEBUG MODELING FORMAT APPS BLOCK

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Experiment\_10

Continuous powergui

19.1

66.41

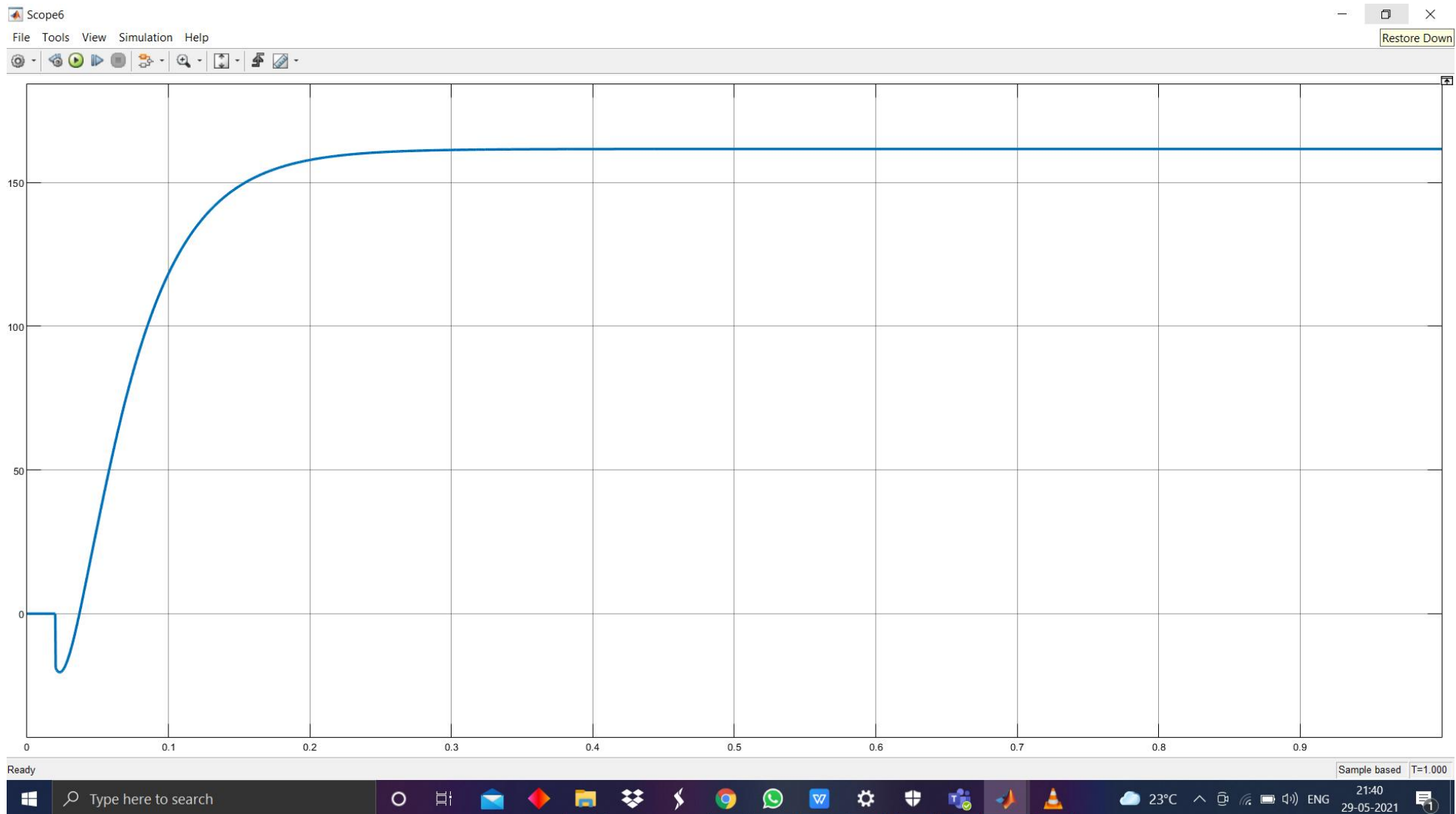
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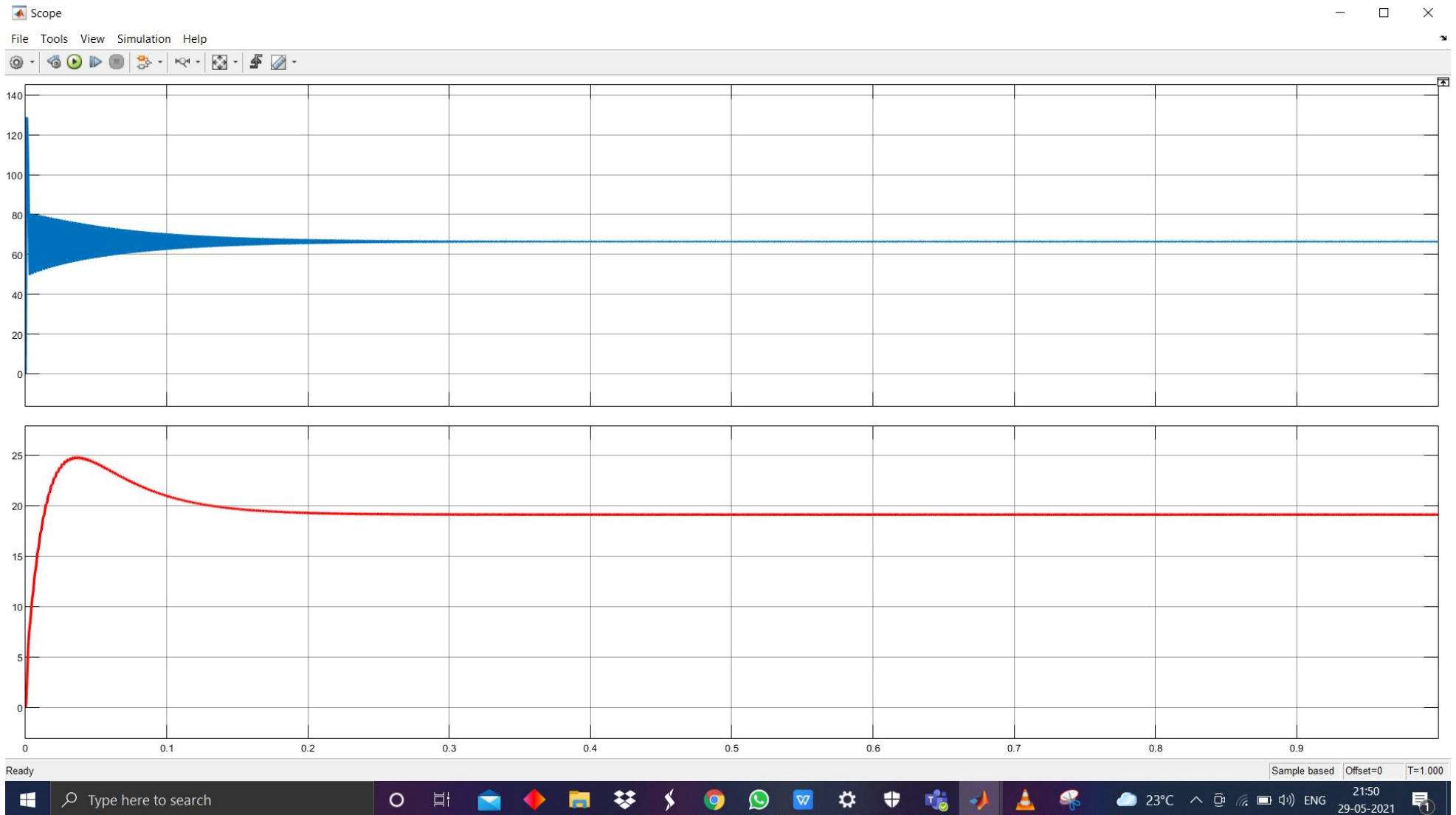
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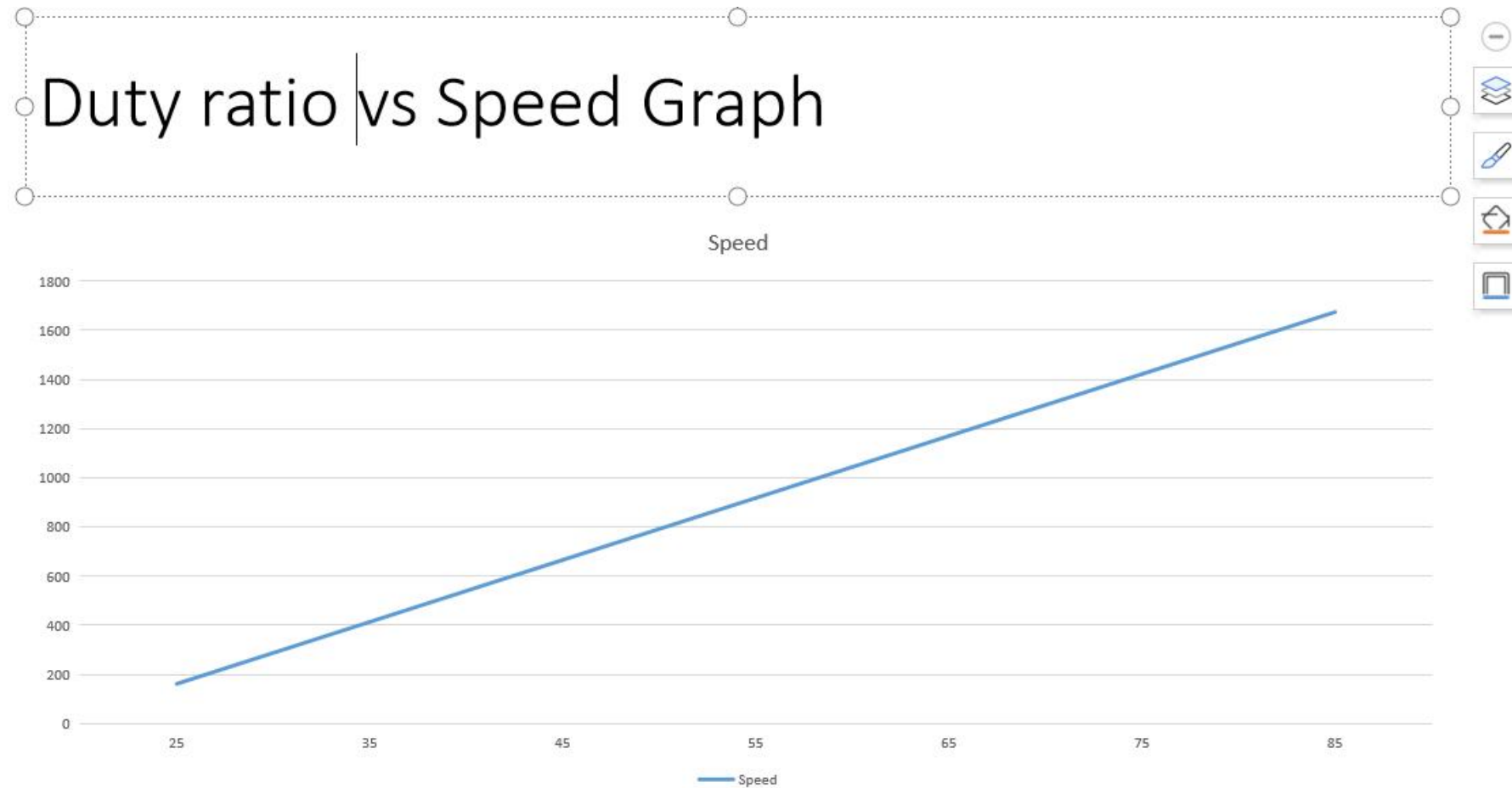




## Observations:

Torque=18.75

Duty ratio(%)	Speed
25	161.7
35	413.8
45	665.9
55	918
65	1170
75	1422
85	1674



**Ac chopper fed ac drive.**

**Model**

Torque=1.2374\*0.67, Input Voltage=140, Duty Ratio=80%

Experiment\_10a \* - Simulink academic use

**SIMULATION** **DEBUG** **MODELING** **FORMAT** **APPS** **SCOPE**

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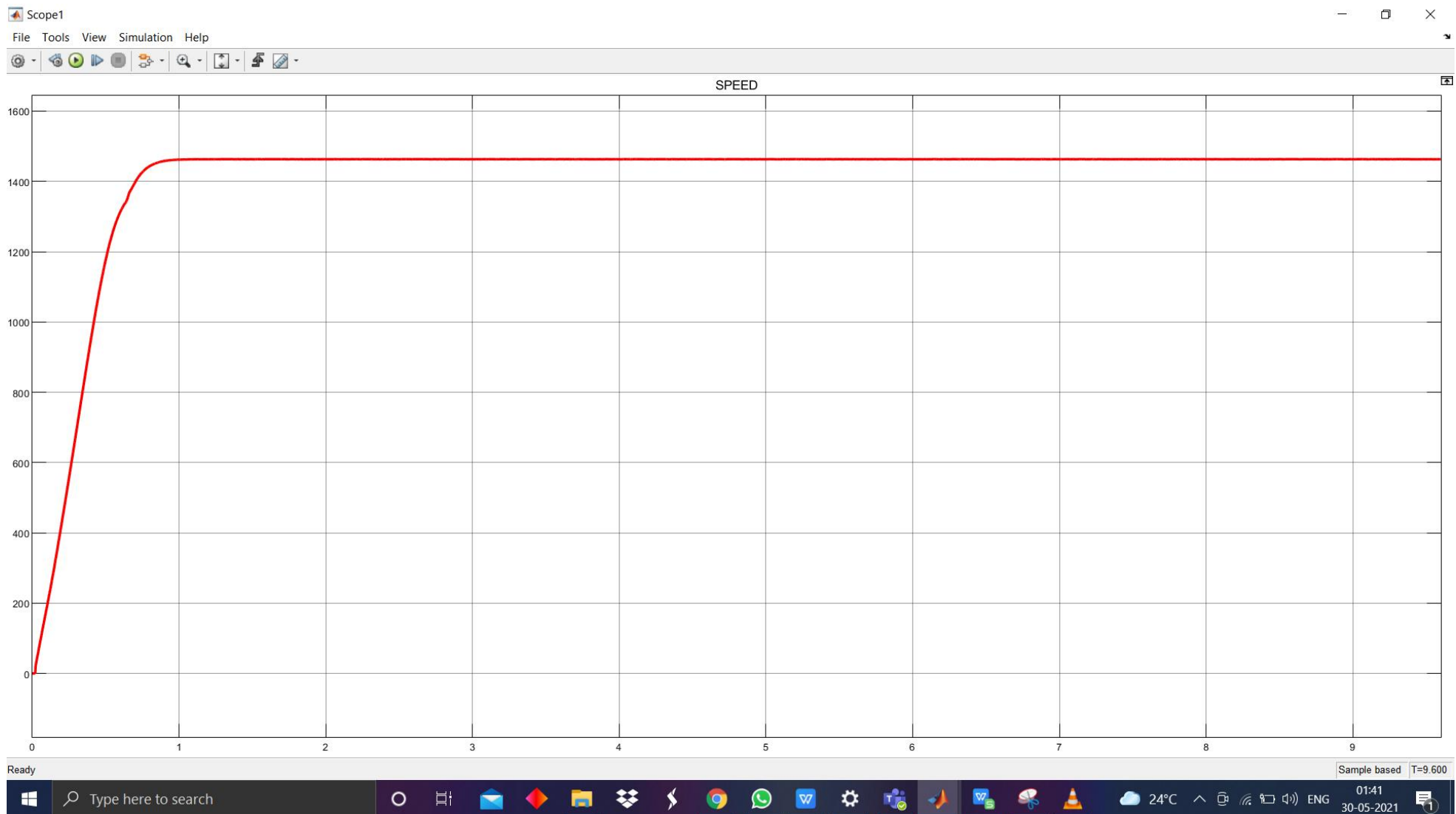
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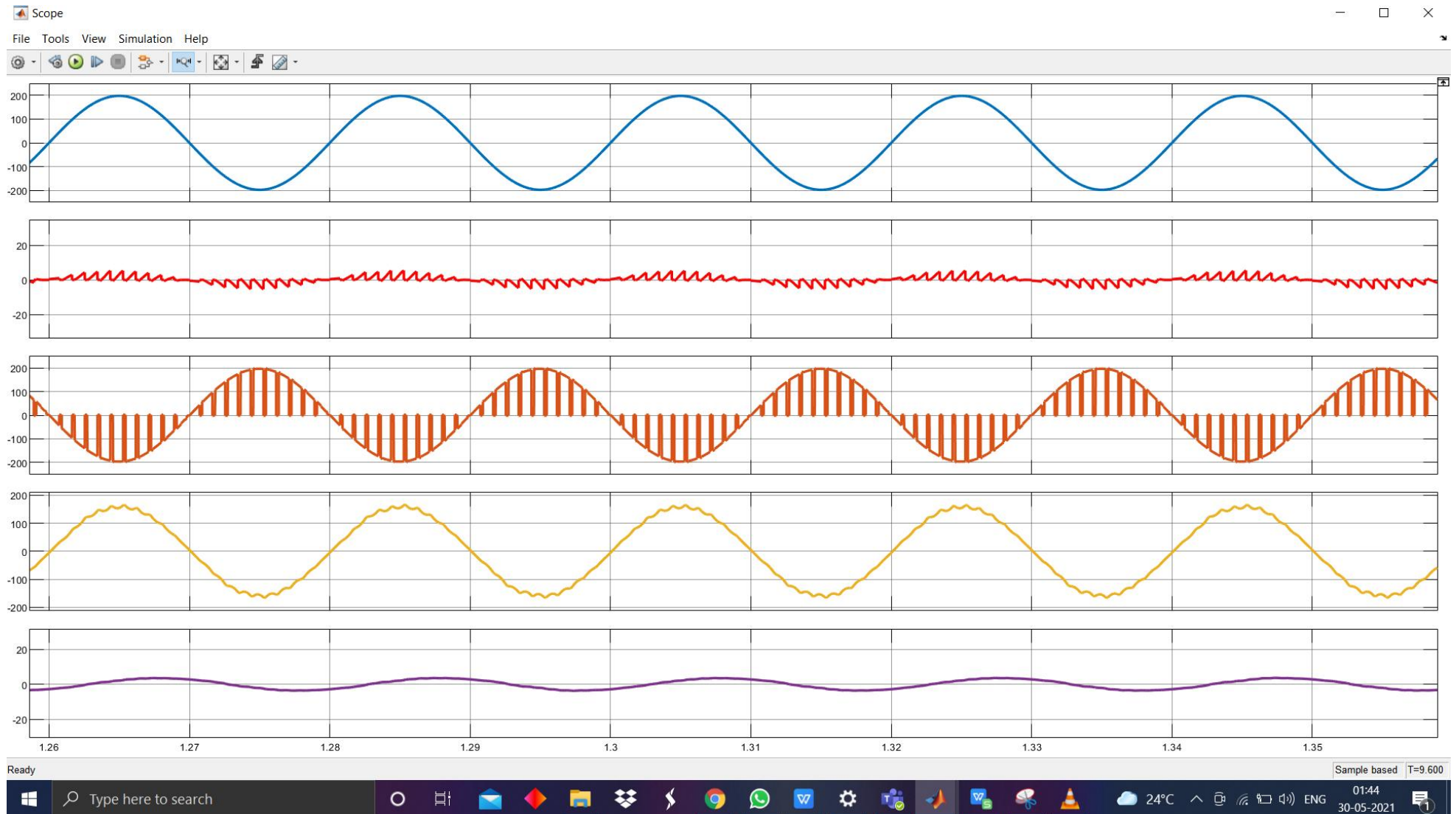
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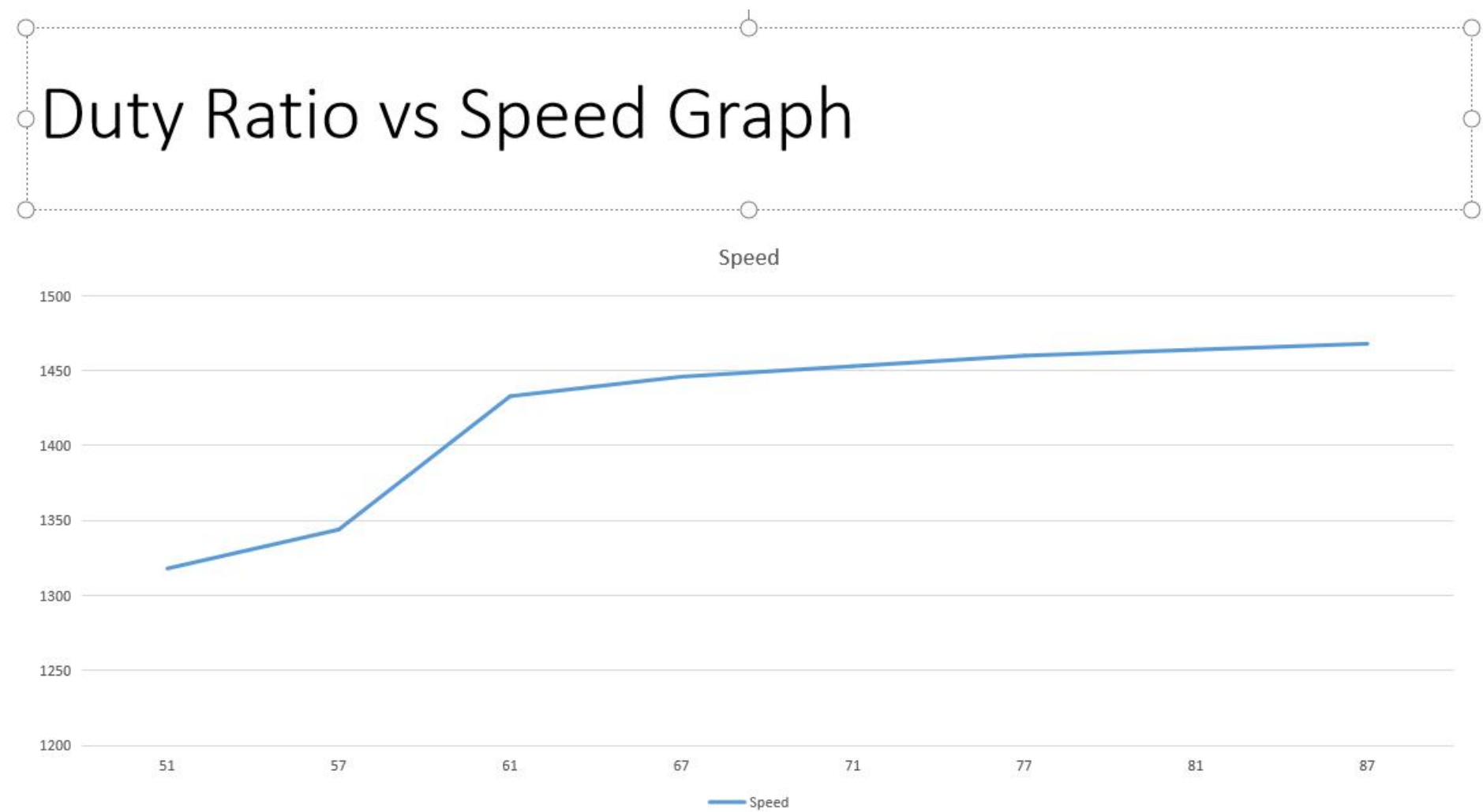


**Observation**

Torque is taken as  $1.2374 \times 0.67$

Duty Ratio(%)	Speed
51	1318
57	1344
61	1433
67	1446
71	1453
77	1460
81	1464
87	1468

**Graph**



**Results:**

Performance of Speed control Dc chopper fed dc drive and ac chopper fed ac drive.studied with generation of required tabulation and graphs