Recommended Assessment

Step Response Modeling

1. Show your procedure and solution to calculate the steady-state gain (K) of your system from the obtained response in the lab.
   Hint: Use the `Cursor Measurements` tool in the Simulink Scope to take measurements directly from the response plots.

2. Show your procedure and solution to calculate the time constant, τ, of your system from the obtained response.

3. Did you derive model parameters (K and τ) correctly? Explain and attach a picture of your model with the correct transfer function as well as a picture of the MATLAB figure and the code to plot the speed response comparing the real system with the transfer function.

4. How would you have to change the transfer function model you found if it took twice as long for the Qube – Servo 3 to reach 63.2% of the steady-state speed?