

## EE380 (Control Systems) Lab work of Experiment 6

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**Student Name**

**Roll No.**

**Bench No.**

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Q5. Take an open loop step response of your motor and calculate  $R_{\Sigma}$  and  $B$ . You can use the latter for  $\hat{B}$ . You can use  $\hat{J} = 1.34 \times 10^{-6} \text{ kg m}^2$ .

Q6. If necessary, modify the values of  $B$  and  $J$  and the relation between  $\hat{I}$  and  $I_f$  in **main-prog-exp6.c**.

Q7. Run your setup and take readings on both sides of the instant when the load steps up in the following cases.

7.1. With  $\hat{I}_L$  as feedback, plot  $\omega$  and  $\hat{T}_L$  versus  $t$ .

7.2. With  $\hat{I}_L$  as feedback, plot  $\omega$  and  $u$  versus  $t$ .

7.3. Without  $\hat{I}_L$  as feedback, plot  $\omega$  and  $\hat{T}_L$  versus  $t$ .

7.4. Without  $\hat{I}_L$  as feedback, plot  $\omega$  and  $u$  versus  $t$ .

Q8. How did you expect your DOB to work? How did it actually work?