

**Electrical Engineering Department**

**Assignment**

**Modeling a DC Motor In Simulink**

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Section: 1

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The Block Diagram was drawn as shown in the figure below and the code was written in the M-file with the given values in the box:



And the code was:

>> J=0.2e-3 ;

b=0.001;

K=0.2;

R=0.5;

L=10e-3;

[A,B,C,D] =linmod('motormod')

[num,den] = ss2tf(A,B,C,D)

To find the controller representation for the DC Motor, first the observer representation was found as the procedure in experiment 5 in the manual.

So the evaluation was as shown:

> In dlinmod at 172

 In linmod at 60

A =

 -5 1000

 -20 -50

B =

 0

 100

C =

 1 0

D =

 0

num =

 1.0e+005 \*

 0 0 1.0000

den =

 1.0e+004 \*

 0.0001 0.0055 2.0250

the observere was:

>> A'

ans =

 -5 -20

 1000 -50