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**MATRIC NO: 15/ENG01/015**

**DEPARTMENT: CHEMICAL ENGINEERING**

**COURSE CODE: CHE 532**

**TEST**

**M File**

Steps taken in the mfile include:

1. Command window
2. Clear
3. Clc
4. Close all
5. bdclose (‘all’)
6. Transpose the data given on the excel sheet for Fi and h.
7. Copy the first row of data “Fi” on the excel sheet and paste it on the workspace of the matlab. The variable should be name Fi and the data should be paste in the space of the value
8. Repeat step 8 for the variable name ‘’h’’.
9. Open (‘NNtest)
10. Sim(‘NNtest’)

**SIMULINK**

Steps taken in the Simulink include:

1. Select the constant block from the model palette and input the value 2.5
2. Select the NN predictive controller block from the model palette
3. Select the subsystem block
4. Select the X(2Y) graph from the model palette
5. Select the clock from the model palette
6. Select the display from the model palette
7. Connect the constant block with the reference input of the NN predictive control block
8. Connect the control signal of the NN Predictive control block to the input of the subsystem block and the output should be connected to the plant output port.
9. A connection should be made to the line connecting the constant block and the refence input and should be connected to the X(2Y) graph block
10. A connection should be made to the line connecting the output of the subsystem and the plant output port.

**For the subsystem block**

* Connect the integrator block, the square root block, the product block, the subtraction block, the division block.
* The constant block labelled “Beta” should be connected to the second port product block, the inport port of the sub system should be connected to the second port subtraction block, the constant block labelled “A” should be connected to the second port of the division block.
* The display block and the out port should be added in between the integrator block and the square root block

**For the NN predictive controller block**

* Click on the NNPC block and click on plant identification.
* Click import data and import the excel data
* Specify the desired weight
* Click on train network