TEST1

STEP and SINE input (continuous input with the same time-period and phase)

Case 1 –amplitude is set to 1

Case 2-amplitude is set to 20

Case 3-amplitude is set to 100

Considering the cases,

PID is tuned for the case 1, which gives the necessary result. The same tuned PID is used for rest all cases and it gives the necessary result.

Same results are obtained when the input is passed to ANN controller

From this we can conclude that PID is not dependent with the change in amplitude with the same time period and phase.

TEST 2

Random signal (discrete input with same time-period and phase)

Case 1-amplitude is set between -1 and 1

Case 2-amplitude is set between -2 and 1

Case 3-amplitude is between -3 and 1

Considering the cases,

The tuned PID of the 1st test is used to check the result. The PID produces a bad result. Whereas the ANN produces a good result than PID.

We can conclude that PID fails to produces good results, when the input has different amplitude variation with the standard tuned PID