**LAB#13(Open Ended)**

**Object:** Analysis of filter using Matlab.

**SOFTWARE:**

* Matlab.
* Ms word.

**METHODOLOGY :**

**Task1:** Generate transfer function so that system become stables , unstables & margionally stable plot their the impulse respone of all the systems & Plot its magnitude & phase response..

**H(z) =**

**Coding:**

n=[1 4]

d=[1 3 2]

a=tf(n,d,1)

subplot(2,1,1)

pzmap(a)

subplot(2,1,2)

impulse(a)

**Coding:**

n=[1 4]

d=[1 3 2]

freqz(n,d)

**Task2:** Write a script file to convert the following continuous system in to discrete time using Ts = 1sec.

**G(s) =**

**Coding:**

n=[0 1]

d=[1 5 6]

s=tf(n,d)

ds=c2d(s,0.1)

subplot(2,1,1)

step(s)

subplot(2,1,2)

step(ds)

**OBSERVATIONS :**

**Task1:**

Transfer function:

z + 4

-------------

z^2 + 3 z + 2

****Sampling time: 1

**Task2:**

**CONCLUSION :**

In this lab, I perform the 2 task one is finding transfer function of the given system and find out system is stable ,unstable or margionally stable I conclude my system is stable because both poles lie on left side of graph . I also find the frequency response of my system . second task I have system in s-plane I change in to discrete and then plot its step size diagram and continuous diagram.