Experiment-6

Aim:- To study & plot the polar plot of any higher order transfer function.

Software Used: MATLAB 2016.

Theory: The polar plot is a plot which can be drawn between the magnitude & phase angle of transfer function by varying from 0 to ∞. The graph sheets consists of concentric circle & radial lines. The concentric circles is the radius lines represented by the magnitude & phase angle respectively

These angles can be represented by (+ve) values in anti clockwise direction. Similarly we can represent angles with negatives in clockwise direction

Practical Soln:- Transfer Function: $G(s) \cdot H(s)$

$$= \frac{1}{s(1+s)}$$

$$s = j\omega;$$

$$G(j\omega) H(j\omega) = \frac{1}{j\omega(1+j\omega)}$$

$$|G(j\omega) H(j\omega)| = \frac{1}{\omega\sqrt{\omega+1}}$$

$$\angle G(j\omega) H(j\omega) = \omega.$$

Result: Successfully implemented on MATLAB.