**18AIS201T-LINEAR SYSTEMS AND SIGNAL PROCESSING**

**ASSIGNMENT -2**

1. Find the frequency response and impulse response of an LTI system described by the differential equation. ---- (5 Marks).
2. Consider a Causal LTI system with frequency response H(jω) =1/(jω+3). For a particular input x(t) this system is observed to produce the output y(t)= e-3tu(t) - e-4tu(t). Determine x(t). ---- (5 Marks).
3. Using Classical method, find the Natural response and forced response of the system



The initial condition conditions are  and the input of the system is

x(t)= e-3t u(t). ---- (10 Marks).