

DEVICE MODELLING LAB

Assignment-04

Note:-Use OP-AMP to simulate Following Circuits.

Q1.Simulate the Differentiator using the NGSPICE

- (a)sine wave as input
- (b)square wave as input
- (c)triangular wave as input

Q2.Simulate the Integrator using the NGSPICE

- (a)sine wave as input
- (b)square wave as input
- (c)triangular wave as input

Q3.Simulate the following using NGSPICE

- (a)High Pass Filter
- (b)BandPass Filter
- (c)BandStop Filter(Notch Filter)

(d)Low Pass Filter

Find out the cut-off frequencies for all the filters by tool and by hand and compare the values

Q4.Simulate the following using NGSPICE

(a) Inverting Summer.

(b) Non-Inverting Summer.