Shaheed Bhagat Singh State Technical Campus, Ferozepur

Roll No:.....
Total no. of Questions: 06
Time: 03 hours

Total no. of pages: 01
M.M:60

B.Tech ECE 4th Sem
Linear Integrated Circuits
Subject Code: BTEC-403 A (Paper ID:)

Note: All questions are compulsory.

Section A (10x2marks =20)

1. Write answers to the point

a) Explain the concept of virtual ground condition.
b) Why open loop op-amp is unsuitable for linear applications?
c) Explain voltage follower and inverter circuit using op-amp.
d) Define CMRR and slew rate of an op-amp.
e) Draw the equivalent circuit and ideal voltage transfer curve of an op-amp.
f) What is the frequency of oscillation of Phase Shift Oscillator?
g) Draw the circuit diagram of All Pass Filter.
h) What are swamping resistors?
i) List the advantages of active filters over passive filters.
j) Explain in brief the operating principle of Phase Locked Loops.

Section B – (5 x 8marks = 40)

2.	Draw the circuit diagram of single input balanced output differential amplifier and also find its voltage gain. OR Draw and explain current mirror for achieving current stabilization in differential amplifiers.	CO1
3.	Draw the diagram of voltage series feedback amplifier and find its close loop voltage gain. OR List and explain various classifications of ICs.	CO2
4.	Discuss the application of an op-amp as Schmitt Trigger. OR Explain the application of an op-amp as basic Comparator.	CO3
5.	Explain the application of 555 timer as a monostable multivibrator. OR Discuss Voltage Regulators in detail.	CO4
6.	Draw and explain the circuit such that the output of an op-amp is equal to the sum of integrals of the individual inputs. i.e $V_o = \int V_{in1}\, dt + \int V_{in2}\, dt$ OR Discuss the application of an op-amp as summing, scaling and averaging amplifier.	CO3