

AG AG AG AG AG AG AG A

Code No: 154BH

R18

JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD

B. Tech II Year II Semester Examinations, March - 2022

LINEAR IC APPLICATIONS
(Common to ECE, EIE)

Time: 3 Hours

Max. Marks: 75

Answer any five questions
All questions carry equal marks

- 1.a) Explain non inverting op-amp with neat circuit diagram.
b) Design an inverting amplifier with a gain of -10 and input resistance of $10\text{k}\Omega$. [8+7]
- 2.a) Explain differential amplifier using one op-amp.
b) Define slew rate and CMRR.
c) How an op-amp can be used as a voltage follower? [7+4+4]
- 3.a) Explain the operation of Op-Amp as an Integrator and Differentiator.
b) Sketch Schmitt trigger using Op-Amp and explain its characteristics. [7+8]
- 4.a) Explain the operation of a current to voltage converter.
b) With neat circuit diagram, explain the working principle of IC 723 voltage regulator. [7+8]
- 5.a) Draw the circuit of a triangular-wave generator; explain its operation and derive expressions for frequency of oscillations?
b) Design a first order low pass filter so that it has a cut off frequency of 2 KHz and pass Band gain of '1'. [8+7]
- 6.a) Design quadrature type oscillator using op-amp and derive the necessary expression.
b) Design a second order Butterworth HPF operating at a frequency of 4 KHz. [8+7]
- 7.a) Construct an astable operation of IC555 with necessary waveforms and explain in detail.
b) Draw the block diagram of IC565 and explain its operation. [8+7]
- 8.a) Draw and explain the circuit diagram of parallel comparator type ADC.
b) Draw and explain the operation of an ladder type R-2R DAC. [8+7]

AG AG AG AG AG AG AG A

AG AG AG AG AG AG AG A