

AG AG AG AG AG AG AG A

R18

Code No: 154BH

JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD

B. Tech II Year II Semester Examinations, August/September - 2021

AG AG AG AG AG AG AG AG A

Time: 3 Hours

Max. Marks: 75

LINEAR IC APPLICATIONS
(Common to ECE, EIE)

AG AG AG AG AG AG AG A

Answer any five questions
All questions carry equal marks

....

- 1.a) Derive closed loop voltage gain, input resistance, output resistance and band width for inverting amplifier with feedback arrangement.
b) Differentiate the functional classification of the differential amplifiers used in the first two stages of Op-amp. [8+7]
- 2.a) List and explain DC characteristics of op-Amp.
b) Brief out the classification of ICs. [10+5]
- 3.a) Discuss the necessity of negative feedback in amplifier applications. How does negative feedback affect the performance of an inverting amplifier?
b) Write about the sampling process and its requirement and explain the basic circuit for sample and hold circuit. [8+7]
- 4.a) Discuss the design of differentiators and integrators in brief.
b) Design a practical integrator circuit to process input sinusoidal wave forms up to 1 kHz with given input amplitude is 10mV. [7+8]
- 5.a) Explain the classification and operation of all types of filters with their characteristics.
b) Design square waveform generator circuit using op-Amp and then explain the same. [6+9]
- 6.a) Design Band pass circuit using op-Amp.
b) Design Wein-bridge oscillator using op-Amp and then derive its expression for frequency of oscillations. [5+10]
- 7.a) Draw the circuit of Schmitt trigger using 555 timer and explain its operation.
b) Design a 555 Astable multivibrator to operate at 10 KHz with 40% duty cycle. [7+8]
- 8.a) Mention about the weighted resistor DAC and R-2R ladder DAC design.
b) Draw the schematic circuit diagram of a counter type A/D converter and explain the operations of the system. [8+7]

—ooOoo—

AG AG AG AG AG AG AG A