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Linear Integrated Circuits
(144114 / 184114 / 234114)

P. Pages : 2

Time : Three Hours **Max. Marks : 80**

Instructions to Candidates :
1. Do not write anything on question paper except Seat No.
2. Answer sheet should be written with blue ink only. Graph or diagram should be drawn with the same pen being used for writing paper or black HB pencil.
3. Students should note, no supplement will be provided.
4. Solve **any two** sub questions from each unit.
5. Assume suitable data if necessary.
6. Figures to the right indicates full marks.
7. Use of non programmable calculator is allowed.

UNIT - I

1. a) Explain differential amplifier with constant current source circuit in detail. **8**

b) Define the following parameters : **8**
i) Input offset voltage
ii) Input bias current
iii) C.M.R.R.
iv) Slew Rate

c) Write short note on : **8**
i) Frequency response of op. amp
ii) OFFSET - Null technique of op. amp.

UNIT - II

2. a) What is instrumentation amplifier ? Draw & explain instrumentation amplifier with three Op. amp. **8**

b) Draw a circuit diagram of temperature compensated log amplifier and derive an expression for output voltage. **8**

c) Draw a circuit diagram of inverting summing amplifier & derive the expression of output voltage of inverting summer (adder) circuit, suggest suitable modification in the circuit so as to work as averaging amplifier. **8**

UNIT - III

3. a) Design a second order low pass filter at a high cutoff frequency of 1 KHz. **8**

b) Explain voltage regulator IC UA 723, and explain its application as adjustable voltage regulator. **8**

c) With the help of neat diagram explain switching regulator & state its applications. **8**

UNIT - IV

4. a) Explain voltage controlled oscillator using IC - 566. **8**

b) Explain the operation of inverting & No inverting comparator with neat waveforms. **8**

c) Draw Astable multivibrator using IC 555. Explain its working & draw waveforms. **8**

UNIT - V

5. a) Draw block diagram of P.L.L. - IC 565 explain its operation in brief. **8**

b) List the specifications of DAC & explain R - 2R Ladder circuit. **8**

c) Explain Dual slope A to D converter in detail. **8**

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