Short Answers Question on LICA.

UNIT - 1

1. What are the different linear IC packages?
2. Define CMRR and Thermal Drift..
3. Draw the pin configuration of an OP-amp 741IC
4. What are the ideal op-amp characteristics?
5. Draw the equivalent circuit of an op-amp.
6. Draw an ideal voltage transfer curve of an op-amp.
7. How fast can the output of an op-amp change by 10V, if its slew rate is 1V/μs
8. Draw the block diagram of an op-amp.
9. What is meant by virtual ground.
10. Define the following terms.
   (a) Input offset voltage.
   (b) Input offset current
   (c) Supply voltage rejection ratio.
   (d) offset voltage adjustment range.
   (e) Large-Signal voltage gain.

UNIT-2

1. What are the important features of an Instrumentation amplifier.
2. What are the limitations of basic Integrator circuit using op-amp
3. What are the limitations of basic differentiator circuit using op-amp.
4. What are applications of an Integrator.
5. Mention any two applications of a Differentiator.
6. What is a zero crossing detector.
7. What is the difference between Comparator and a Schmitt trigger.
8. Draw the circuit diagram of an Astable multivibrator using op-amp.
9. Mention the applications of a Sample and hold circuit.
10. How the Noninverting amplifier can be used as a voltage to current Converter

UNIT-3

1. What are the advantages of Active filteres over passive filters.
2. Draw the frequency response chaveeteristic of various filters
3. How electric filters can be classified.
4. what is meant by frequency scaling Technique.
5. what is a notch filter.
6. Draw the circuit diagram of an Allpass filter.
7. Design an active Butterworth LPF with a cutoff freq of 2KHz and pass band gain of 2.
8. write short notes on three terminal voltage Regulators.
9. what is the roll of rate of a first order filter.
10. why do we use higher order filters? what is a Sallen-key filter.

UNIT - 4

(1) what are the important features of a 555 IC timer.

(2) Draw the pin configuration of a 555 IC.

(3) what is meant by ON load and OFF load

(4) Give methods for obtaining Symmetrical Square wave.

(5) Explain the function of Reset pin in 555 IC

(6) Define duty cycle 'D' of timer in astable mode.

(7) Mention some applications of timer in monostable mode.

(8) Design a Symmetrical square wave form generator of 10KHz.

(9) Draw the circuit of a schmitt trigger using 555 timer and explain its operation.

(10) How is an astable multivibrator connected into a PPM (Pulse position modulator.

UNIT-5

(1) Define Resolution, linearity, accuracy of a DAC

(2) List the various A/D conversion techniques

(3) which is the fastest ADC and why?

(4) what is the disadvantage of the dual slope ADC

(5) what are the disadvantages of weighted resistor Digital to analog converter (DAC)

(6) The basic step of a 9 bit DAC is 10.3 mV. If 000000000 represents 0V, what output is produced if the input is 101101111 ?.

(7) How many levels are possible in a two-bit DAC? what is the fs resolution if the output range is 0 to 3V.

(8) Draw the block diagram of a PLL (phased locked loop).

(9) Define Lock-in-Range, capture range, pull-in-time of a PLL.

(10) Draw the Pin configuration of 566 IC which is used as a VCO (voltage controlled oscillator)