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**Question Paper Code: 33502**

B.E. / B.Tech. DEGREE EXAMINATION, NOV 2019

Third Semester

Electronics and Instrumentation Engineering

01UEI302 - LINEAR INTEGRATED CIRCUITS AND APPLICATIONS

(Regulation 2013)

Duration: One hour

Maximum: 30 Marks

PART A - (6 x 1 = 6 Marks)

**(Answer any six of the following questions)**

- Aluminium is generally used of metallization because it has
  - Good mechanical bonds with silicon
  - Relatively good conductor
  - Deposit aluminium films on the surface
  - All of the above
- What happens when the common terminal of  $V^+$  and  $V^-$  sources is not grounded?
  - Twice the Voltage is applied
  - Op-amp get damaged
  - ) a & b
  - none of the above
- All of the following are basic op-amp input modes of operation except
  - inverting mode
  - common-mode
  - double-ended
  - single-ended

4. The input offset current equals the
  - (a) average of two base currents
  - (b) collector current divided by the current gain
  - (c) difference between two base-emitter voltages
  - (d) difference between two base currents
  
5. What is the function of a ladder network?
  - (a) Changing an analog signal to a digital
  - (b) Changing a linear signal to a digital
  - (c) Changing a digital signal to an analog
  - (d) None of the above
  
6. The main drawback of dual slope ADC converters are
  - (a) Long conversion
  - (b) High cost
  - (c) Comparator and DAC are needed
  - (d) none of the above
  
7. In a PLL, to obtain lock, the signal frequency must
  - (a) come within the lock range
  - (b) be less than the capture frequency
  - (c) come within the capture range
  - (d) be greater than the capture frequency
  
8. Following one is not the application of PLL.
  - (a) Frequency Multiplication
  - (b) FSK Demodulator
  - (c) a & b
  - (d) FSK Generator
  
9. What is (are) the principal area(s) of application for isolation amplifiers?
  - (a) medical
  - (b) power plant
  - (c) automation
  - (d) all of the above
  
10. Which of the following circuits is (are) linear/digital ICs?
  - (a) Comparators
  - (b) Timers
  - (c) Voltage-controlled oscillators
  - (d) All of the above

PART – B (3 x 8= 24 Marks)

**(Answer any three of the following questions)**

11. Explain the fabrication of MOSFET. (8)
  
12. Describe the DC characteristics of op-amp. (8)

13. With the circuit diagram, discuss the following applications of operational amplifier:
  - (i) Sample and hold circuit (8)
  - (ii) Comparator
14. Describe the block diagram and connection diagram of voltage controlled oscillator. (8)
15. With suitable schematic diagram describe the functioning of an 8038 function generator IC. (8)