Roll No. ☐☐☐☐☐☐☐☐☐☐☐☐   **Total No. of Pages : 02**

Total No. of Questions : 18

B.Tech. (ECE) / B.Tech. (Electronics & Computer Engg.) (2012 to 2017)
(Sem.–5)
LINEAR INTEGRATED CIRCUITS
Subject Code : BTEC-503
M.Code : 70547

Time : 3 Hrs.   **Max. Marks : 60**

INSTRUCTIONS TO CANDIDATES :
1. **SECTION-A is COMPULSORY consisting of TEN questions carrying TWO marks each.**
2. **SECTION-B contains FIVE questions carrying FIVE marks each and students have to attempt any FOUR questions.**
3. **SECTION-C contains THREE questions carrying TEN marks each and students have to attempt any TWO questions.**

SECTION-A

Answer briefly :

1. Differentiate between cascade and cascode amplifiers.

2. What is thermal drift? How does it affect the performance of op-amp circuit?

3. What is voltage limiting and why is it needed?

4. What are the characteristics of an ideal op-amp?

5. Define Input Bias Current and SVRR.

6. List the advantages of active filters over passive ones.

7. Explain the concept of virtual ground.

8. Explain the working principle of PLL.

9. Write the applications of monostable multivibrator.

10. In an astable multivibrator $R_A = 10$ kΩ, $R_B = 100$ kΩ and C = 0.1 μF. Calculate frequency of oscillation.

SECTION-B

11. What is level translator circuit? Why is it used with cascaded differential amplifier?

12. Compare inverting and non-inverting amplifiers.

13. a) Design a differentiator to differentiate an input signal that varies in frequency from 10 Hz to about 1 kHz.

    b) Determine the output of above differentiator if a sine wave of 1V peak at 1kHz is applied to its input.

14. What is the name of the circuit that is used to detect the peak value of the nonsinusoidal input waveform? Explain its operation.

15. Explain with the help of circuit diagram operation of instrumentation amplifier using three op-amps.

SECTION-C

16. Write a note on :

    a) Sample and hold circuit

    b) V to F converter

17. Explain in detail about voltage regulator and its types.

18. a) Explain the operation of 555 timer as monostable multivibrator.

    b) What are the different types of linear IC packages and what are the criteria of selecting an IC package?

NOTE : Disclosure of Identity by writing Mobile No. or Making of passing request on any page of Answer Sheet will lead to UMC against the Student.