



C14-AEI-503

4609

BOARD DIPLOMA EXAMINATION, (C-14)

OCT/NOV—2016

DAEIE—FIFTH SEMESTER EXAMINATION

LINEAR INTEGRATED CIRCUITS AND APPLICATIONS

Time : 3 hours ]

[ Total Marks : 80

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**PART—A**

3×10=30

**Instructions** : (1) Answer **all** questions.

(2) Each question carries **three** marks.

(3) Answers should be brief and straight to the point and shall not exceed *five* simple sentences.

1. Define the term CMRR.
2. Draw the schematic symbol of operational amplifier.
3. Write the advantages of voltage follower.
4. Draw i/p and o/p waveforms of a differentiator.
5. List the limitations of passive filters.
6. Draw the practical response of a notch filter.
7. Give the mechanism provided by pin-4 in a 555 IC timer.
8. Draw the timing sequence of timer for astable operation.

\* 9. Name the blocks in the PLL block diagram.

10. List the applications of a comparator circuit.

**PART—B**

10×5=50

**Instructions** : (1) Answer *any five* questions.

(2) Each question carries **ten** marks.

(3) Answers should be comprehensive and the criterion for valuation is the content but not the length of the answer.

11. Explain the operation of a differential amplifier with circuit. 10

12. (a) List the limitations of a discrete operational amplifier. 5

(b) List the advantages of an integrated operational amplifier. 5

13. Describe the operation of an instrumentation amplifier with a neat circuit. 8+2

14. Describe the operation of inverting and non-inverting summing amplifiers with circuits. 8+2

15. Explain the operation of a wide band pass filter circuit with a frequency response. 10

16. Explain the operation of a regenerative comparator circuit and draw its transfer characteristics. 8+2

17. Explain the timer 555 IC in monostable operation with a functional block diagram. 10

\* 18. (a) Mention the applications of PLL. 5

(b) Mention the applications of 555 IC timer. 5

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