



C14-AEI-503

4609

BOARD DIPLOMA EXAMINATION, (C-14)

MARCH/APRIL—2017

DAEIE—FIFTH SEMESTER EXAMINATION

LINEAR INTEGRATED CIRCUITS AND APPLICATIONS

Time : 3 hours]

[Total Marks : 80

PART—A

3×10=30

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

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

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

1. Draw the pin diagram of dual-inline package for typical IC 741.
2. Define CMRR.
3. List any three effects of negative feedback on an amplifier.
4. Draw the circuit of voltage follower using op-amp.
5. Draw the ideal and practical frequency response plots for a low-pass filter.
6. List the disadvantages of passive filters.
7. State the features of 555 IC.
8. Mention the formula for output frequency of astable multivibrator.
9. Draw the circuit of a comparator, using operational amplifier.
10. List any three applications of PLL.

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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.** Draw the circuit diagram of differential amplifier and explain the operation of differential amplifier.
- 12.** (a) State the requirement of an operational amplifier.
(b) List the limitations of differential amplifier using discrete components.
- 13.** Draw the circuit diagram of isolation amplifier and explain the operation of the circuit.
- 14.** (a) Draw the circuit of summing amplifier and explain it.
(b) Draw the circuit of differentiator and explain it.
- 15.** Explain the operation of bandpass filter circuit using op-amp with a neat sketch.
- 16.** Explain the operation of monostable multivibrator using 555 IC timer with diagrams.
- 17.** (a) Draw the block diagram of 555 IC timer.
(b) Draw and explain the block diagram of PLL.
- 18.** Draw the circuit of triangular wave generator using op-amp and explain its operation.

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