



C14-AEI-503

4609

BOARD DIPLOMA EXAMINATION, (C-14)

MARCH/APRIL—2018

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. Give the basic specifications of ideal operational amplifier.
2. Draw the pin diagram of typical 741 IC.
3. Draw the circuit of integrator circuit.
4. List the affects of negative feedback on an amplifier.
5. Draw the practical frequency response plot for LPF.
6. List the advantages of active filters.
7. Mention the applications of timer 555 IC.
8. List the applications of PLL.
9. Draw the pin diagram of 555 timer IC.
10. Draw the circuit of Wien bridge oscillator.

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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.** Explain the block diagram of typical integrated circuit operational amplifier. 10
- 12.** Give the list of package styles of analog IC's and sketch them. 8+2
- 13.** Explain the operation of a voltage follower with a neat circuit. 8+2
- 14.** Explain the operation of instrumentation amplifier with a neat circuit. 8+2
- 15.** Explain the operation of an HPF using OP AMP with a neat circuit. 8+2
- 16.** Explain the operational block diagram of 555 timer IC with various blocks. 10
- 17.** Explain the operating principle of PLL with the help of a block diagram. 8+2
- 18.** (a) Draw the monostable multivibrator using 555 timer IC and give the timing interval formulae. 5
- (b) Draw the Schmitt trigger circuit using OP AMP. Also sketch its input and output waveforms. 5

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