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C16-AEI-401

**6414**

**BOARD DIPLOMA EXAMINATION, (C-16)**

**JUNE/JULY—2022**

**DAEI - FOURTH SEMESTER EXAMINATION**

**LINEAR IC APPLICATIONS AND COMMUNICATION SYSTEMS**

*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. State the requirement of operational amplifier.
2. Define 'input offset voltage' of operational amplifier.
3. Mention the effects of negative feedback on amplifier.
4. Draw the circuit of voltage to current converter.
5. Define the term filter.
6. Draw the pin diagram of 555 timer IC.
7. State the need of modulation in communication system.
8. List the different FM demodulator circuits.
9. Sketch the waveforms of PAM.
10. State the basic principle of 'RADAR'.

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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 criterion for valuation is the content but not the length of the answer.

11. Explain the operation of differential amplifier with diagram.
12. Explain the operating principle of Phase Locked Loop (PLL) with a block diagram.
13. Explain the operation of LPF and BPF using operational amplifier with diagram.
14. Explain the operation of monostable multivibrator using 555 timer IC with diagram.
15. Explain AM generator using base circuits with diagram.
16. Explain Fosters-Seely demodulator with diagram.
17. Explain PCM with a block diagram.
18. Explain the principle of fibre optic communication with a block diagram.

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