



C09-AEI-605

**3718**

**BOARD DIPLOMA EXAMINATION, (C-09)**  
**MARCH/APRIL—2017**  
**DAEI—SIXTH SEMESTER EXAMINATION**  
PRINCIPLES OF COMMUNICATIONS AND  
LINEAR IC APPLICATIONS

*Time : 3 hours ]*

*[ Total Marks : 80*

---

**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 need for modulation in communication system.
2. Write any three comparisons between AM and FM.
3. Define sensitivity and fidelity.
4. List any three applications of PWM.
5. List any three basic specifications of ideal operational amplifier.
6. Define CMRR.
7. Draw the circuit of summing amplifier using op-amp.
8. Draw the circuit of a square wave generator using op-amp.

- \* 9. Draw the circuit of Schmitt trigger using op-amp.
10. Draw the circuit of Wien bridge oscillator using op-amp.

**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 block diagram of AM transmitter and explain it.
12. Draw and explain Foster-Seeley demodulator.
13. Define and sketch the waveforms of PAM, PPM, PWM and PCM.
14. Draw the block diagram of a typical integrated circuit (IC) operational amplifier and explain it.
15. Draw the circuit of an integrator using op-amp and explain it.
16. Draw the circuit of voltage to current converter and explain its operation.
17. Draw the circuit of astable multivibrator using 555 timer and explain its operation.
- \* 18. Draw and explain the operation of a triangular wave generator using op-amp.

\*\*\*