



C09-AEI-605

**3718**

**BOARD DIPLOMA EXAMINATION, (C-09)  
OCT/NOV—2013  
DAEI—SIXTH SEMESTER EXAMINATION**

PRINCIPLES OF COMMUNICATIONS  
AND LINEAR IC 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. State the need for modulation in communication system.
2. Distinguish between the AM and FM.
3. List the FM demodulator circuits.
4. List the applications of PWM.
5. List the different package styles of analog ICs.
6. Draw the circuit of a differential amplifier.
7. State the operation of current to voltage converter.
8. Draw the diagram to triangular wave generator.
9. Draw the diagram of astable multivibrator using 555 IC.
10. Draw the diagram of sawtooth wave generator.

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**PART—B**

10×5=50

- Instructions :** (1) Answer *any five* questions.  
(2) Each question carries **ten** marks.  
(3) The answers should be comprehensive and the criterion for valuation is the content but not the length of the answer.

- 11.** Explain the operation of FM generation using reactance tube method.
- 12.** (a) Explain the operation of single diode detector circuit. 6  
(b) Define the following : 4  
(i) Sensitivity  
(ii) Fidelity
- 13.** List the different types of multiplexing methods and explain FDM with neat sketches.
- 14.** Define (a)  $A_v$ , (b)  $Z_o$ , (c)  $Z_i$ , (d) input offset voltage and (e) input offset current of an operational amplifier. 2+2+2+2+2=10
- 15.** Explain the operation of (a) summing amplifier and (b) voltage to current converter using operational amplifier. 5+5=10
- 16.** (a) Explain the operation of comparator using operational amplifier. 5  
(b) State the operation of open loop operation of operational amplifier. 5
- 17.** Explain the operation of Schmitt trigger using operational amplifier.
- 18.** Explain the operation of 555 IC block diagram with a neat sketch.

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