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C09–AEI–**605**

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BOARD DIPLOMA EXAMINATION, (C–09)

OCT/NOV—2016

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. List the three different types of modulation.

2. Write any three comparisons between PM and FM.

3. State the need for heterodyning in a radio receiver.

4. List any three applications of PCM.

5. State the requirement of an operational amplifier.

6. Define input impedance and output impedance of op-amp.

7. Draw difference amplifier circuit using op-amp.

8. Draw the circuit of a square wave generator using IC 555.

9. Draw the circuit of triangular wave generator using op-amp.

10. Draw the circuit of Wein 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 FM transmitter and explain it.

12. Draw and explain super-heterodyne receiver.

13. Compare between PAM, PPM, PWM and PCM.

14. Draw the circuit of a differential amplifier and explain it.

15. Draw the circuit of a differentiator using op-amp and explain it.

16. Draw the circuit of instrumentation amplifier and explain its operation.

17. Draw the circuit of monostable multivibrator using 555 timer and explain its operation.

18. Draw and explain the operation of a Schmitt trigger using op-amp.

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