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C14–EC–304

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BOARD DIPLOMA EXAMINATION, (C–14)

MARCH/APRIL—2017

DECE—THIRD SEMESTER EXAMINATION

ANALOG COMMUNICATION

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. Define phase modulation.

2. Define noise figure and signal to noise ratio.

3. Define modulation index of FM signal.

4. AM broadcast transmitter radiates 50 kW when the modulation percentage is 40. Find out the carrier power.

5. List the specifications of AM transmitters.

6. What is the need for superheterodyning in radio receiver?

7. Define half-wave dipole and give its radiation pattern.

8. Define the terms power gain and directivity.

9. Define decibel and neper.

10. Define critical frequency in skywave propagation.

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. *(a)* Describe the basic elements of a communication system with block diagram. 5

(b) What are the different types of internal and external noises? 5

12. *(a)* Derive time domain equation for AM signal. 7

(b) Draw the frequency spectrum of an AM signal. 3

13. *(a)* Compare AM and FM. 6

(b) List the applications of SSB. 4

14. *(a)* Draw the block diagram for high-level modulated transmitter and explain. 6

(b) Define sensitivity and fidelity. 4

15. Draw the block diagram of indirect FM transmitter and explain.

16. Explain the construction and working of rhombic antenna.

17. Explain the operation of broadside and end-fire arrays.

18. Explain ground wave propagation.

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