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C16–EC–304

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BOARD DIPLOMA EXAMINATION, (C–16)

OCT/NOV—2018

DECE—THIRD SEMESTER EXAMINATION

ANALOG AND DIGITAL COMMUNICATION SYSTEMS

Time : 3 hours] [*Total Marks* : 80

PART—A 10×3=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 advantages of SSB.

2. Define amplitude modulation.

3. Write any three merits of FM over AM.

4. State the sampling theorem.

5. Define bit rate and baud rate.

6. State the need for digital modulation.

7. Define the terms 'sensitivity' and 'fidelity' of a radio receiver.

8. Compare low-level modulation with high-level modulation.

9. Compare TDM with FDM.

10. State the need for modem in data communication.

PART—B

5×10=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)* Define bandwidth and mention its significance in communication system. 7

(b) List the effects of overmodulation. 3

12. *(a)* Explain time domain and frequency domain signals. 6

(b) Draw the time domain and frequency domain waveforms of an AM wave. 4

13. Explain how signal contains multiple frequency components, use Fourier series for explanation.

14. Explain coding and decoding of a PCM signal.

15. Explain the process of asynchronous data communication.

16. Explain the working of superheterodyne receiver with block diagram.

17. Explain the demodulation of AM signal using envelope detector.

18. Explain time division multiplexing with block diagram.

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