



C16-EC-304

6235

**BOARD DIPLOMA EXAMINATION, (C-16)**  
**OCT/NOV—2017**  
**DECE—THIRD SEMESTER EXAMINATION**

ANALOG AND DIGITAL COMMUNICATION SYSTEMS

Time : 3 hours ]

[ Total Marks : 80

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**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. Define frequency modulation.
2. Define periodic and non-periodic signals.
3. Define the terms signal to noise ratio and noise figure.
4. Define PAM and draw its waveform.
5. Write briefly about parity check method of error detection.
6. State the advantages of CRC method of error detection.
7. List any three specifications of transmitters.
8. What are the limitations of TRF receiver?
9. List different types of modems.
10. State the need for multiplexing.

**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) Derive time domain equation for an AM signal. 7  
(b) Define modulation index of AM signal. 3
12. (a) Define pre-emphasis and de-emphasis. 5  
(b) A 20 watts carrier is modulated to a depth of 65%. Calculate (i) the total power in AM and (ii) the side band power. 5
13. Explain the relationship between channel bandwidth, baseband bandwidth and transmission time.
14. (a) Define quantization and explain about quantization noise. 7  
(b) Define information capacity of a channel. 3
15. (a) Explain ASK modulator with block diagram. 7  
(b) List the advantages of FSK. 3
16. Explain Foster-Seelay discrimination with block diagram.
17. Draw and explain the working of high-level modulated transmitter.
18. Explain working of FDM with block diagram.

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