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

**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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