

7242

BOARD DIPLOMA EXAMINATION, (C-20)

NOVEMBER/DECEMBER—2022

DECE - THIRD SEMESTER EXAMINATION

ANALOG AND DIGITAL COMMUNICATION SYSTEMS

Time : 3 hours ]

[ Total Marks : 80

**PART—A**

3×10=30

- Instruction :** (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. What conclusions can be drawn from noise triangle?
2. How does WBFM differ from NBFM?
3. List different types of noise.
4. Draw the simple block diagram of communication system.
5. State sampling theorem.
6. Define PAM.
7. Calculate the percent of errors detected in parity method.
8. Which method of detection is used for PSK?
9. Define sensitivity, fidelity of a radio receiver.
10. State the need for modem.

**PART—B**

8×5=40

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- Instructions :** (1) Answer **all** questions.  
(2) Each question carries **eight** marks.  
(3) Answers should be comprehensive and criterion for valuation is the content but not the length of the answer.

**11.** (a) Mathematically show that the bandwidth required for AM is  $2f_m$ .

**(OR)**

(b) Derive an equation for AM wave in time domain.

**12.** (a) Draw the modulated waveforms of PAM, PPM, PWM and PCM for a given modulating signal.

**(OR)**

(b) Explain the process of quantization with waveforms.

**13.** (a) Distinguish between Synchronous and Asynchronous transmitters.

**(OR)**

(b) Explain Binary ASK Coherent Demodulator with block diagram.

**14.** (a) Explain the working of High level AM Transmitter.

**(OR)**

(b) How the disadvantages of TRF receiver are nullified in Super Heterodyne Receiver?

**15.** (a) Explain ADSL technology with bandwidth allocations for various channels.

**(OR)**

(b) Compare between TDM and FDM.

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**PART—C**

10×1=10

- Instructions :** \*
- (1) Answer the following question.
  - (2) The question carries **ten** marks.
  - (3) Answer should be comprehensive and the criterion for valuation is the content but not the length of the answer.

**16.** If the Even Parity Hamming Code (111 001101) is transmitted and the received code is (110001101). The received code is correct or not, justify.

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