

6235

BOARD DIPLOMA EXAMINATION, (C-16)

MAY/JUNE—2023

DECE - THIRD SEMESTER EXAMINATION

ANALOG AND DIGITAL COMMUNICATION SYSTEMS

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 bandwidth and mention its significance in a communication system.
2. Define frequency modulation and phase modulation.
3. Mention the merits of FM over AM.
4. Define bit rate and dynamic range for PCM systems.
- * 5. List different error detection schemes.
6. State the need for digital modulation.
7. State the limitations of TRF receiver.
8. Define the terms image frequency and IMRR in a radio receiver.
9. State the need for multiplexing.
10. List different types of modems.

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PART—B

10×5=50

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

11. (a) Define the modulation index of an AM signal. 3
(b) Derive the relation between total power and carrier power in AM. 7
12. (a) Explain the need for DSB-SC and SSB modulation. 7
(b) List the advantages and disadvantages of SSB. 3
13. (a) Define signal to noise ratio, noise figure and noise temperature. 3
(b) Derive the time domain equation for FM signal. 7
14. Explain the process of quantization with waveforms. 10
15. Explain the conversion between parallel and serial data with the help of the UART block diagram. 10
16. Draw the block diagram of FM transmitter using reactance method and explain its working. 10
- * 17. Explain the working of super heterodyne receiver with a block diagram. 10
18. Explain Asynchronous Digital Subscriber Line (ADSL) technology. 10

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