



C16-EC-304

6235

BOARD DIPLOMA EXAMINATION, (C-16)

JANUARY/FEBRUARY—2022

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. State the need for modulation in communication systems.
2. Define modulation index of AM and FM signals.
3. List any three merits of FM over AM.
4. Define information capacity of a channel.
5. List different error detection schemes in digital modulation.
6. Define the terms bit rate and baud rate.
7. Write any three differences between low level and high level modulation.
8. Define the terms selectivity and fidelity of a radio receiver.
9. State the need for multiplexing.
10. List different types of modems.

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[ Contd...

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## PART—B

- 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) Explain the terms time domain and frequency domain signals. 5  
(b) Define periodic and non-periodic signals. 5
12. (a) Define amplitude modulation. 3  
(b) Derive the relation between total power and carrier power in AM. 7
13. (a) Explain the concept of VSB transmission. 5  
(b) Define pre-emphasis and de-emphasis. 5
14. Explain PAM and PWM with waveforms. 10
15. Explain the conversion between parallel and serial data with the help of UART block diagram. 10
16. Draw the block diagram of low level modulated transmitter and explain its working. 10
17. Explain the working of superheterodyne receiver with a block diagram. 10
18. Explain frequency division multiplexing. 10

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