

Roll No.

Total Pages : 3

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May 2023
B.Tech. (ENC) IV SEMESTER
Digital Communication
(ECP-401)

Time: 3 Hours]

[Max. Marks. : 75

Instructions :

1. *It is compulsory to answer all the questions (1.5 marks each) of Part-A in short.*
2. *Answer any four questions from Part-B in detail.*
3. *Different sub-parts of a question are to be attempted adjacent to each other.*

PART-A

1. (a) Compare digital and analog signals. Give an example also. (1.5)
- (b) Define Fourier series and give its applications. (1.5)
- (c) Enlists salient features of X.21. (1.5)
- (d) What is meant by RS 232? Give its applications. (1.5)
- (e) Make comparisons between connection oriented and connectionless-services. (1.5)
- (f) Enlists salient features of packet switching. (1.5)
- (g) What is meant by virtual circuits? (1.5)

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- (h) Define Hamming codes. Give its applications. (1.5)
- (i) What is meant by data compression? (1.5)
- (j) Briefly explain security in data communications. (1.5)

PART-B

- 2. (a) Enlist properties of Fourier Transform. Also explain any two. (10)
- (b) Define ESD and PSD. Also discuss effect of limited bandwidth on digital signal. (5)

- 3. (a) State and explain Nyquist theorem and Shannon limit. (5)
- (b) Differentiate between twisted pair, coaxial and fiber optic-cables. (10)

- 4. Define WDM. Enlists salient features of PSTN and explain the working of ISDN. (15)

- 5. (a) Differentiate between frequency division and time division multiplexing. (5)
- (b) Compare (i) asynchronous and synchronous transmission (ii) simplex, half duplex and full duplex communication modes. (10)

- 6. (a) Define CRC. Explain Parity check, block sum check and frame check sequences. (10)
 - (b) Differentiate secret key cryptography and public key cryptography. (5)

 - 7. Using an example, explain run length encoding and Huffman encoding. (15)
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