

Roll No.

OLE-24042

B. Tech. 3rd Semester (IT) Examination – April, 2021

DIGITAL AND ANALOG COMMUNICATION

Paper : EE-217-F

Time : Three Hours]

[Maximum Marks : 100

Before answering the questions, candidates should ensure that they have been supplied the correct and complete question paper. No complaint in this regard, will be entertained after examination.

Note : Attempt *five* questions in all, selecting *one* question from each Section. Question No. 1 is *compulsory*. All questions carry equal marks.

1. (a) Effect of bandwidth on digital signal
- (b) Nyquist theorem
- (c) Discuss Asynchronous Transmission
- (d) Run length encoding
- (e) Sliding window protocol

4 × 5 = 20

SECTION – A

2. (a) How bandwidth scarcity affects the digital communication system ? 10
- (b) State and prove Rayleigh's energy theorem. 10
3. (a) State and explain various properties of 'Fourier Transform'. 10
- (b) Explain the Block diagram of Digital communication. Also discuss advantages of Digital communication over Analog communication. 10

SECTION – B

4. (a) What is Data Encoding ? Explain its type with the help of example. 10
- (b) Write short note on Rs-232 and X.21. 10
5. (a) Explain Amplitude Modulation with the help of Wave diagram, Also give out its advantages and disadvantages. 10

- (b) Explain the working of Optical Fiber Cable as wire line communication medium. Also give out its advantages. 10

SECTION – C

6. (a) What are advantages of Packet switching over circuit switching ? In which type of Communication Packet switch is advantageous to use ? 10
- (b) Write in details about ISDN system with the help of block diagram. 10
7. (a) Explain different switching mechanism compare them with each -other. 10
- (b) Compare the TDM and FDM with respect to various features. 10

SECTION – D

8. (a) What do you mean by error detection ? Explain parity check and Block sum check method in detail. 10

- (b) Discuss the Public Key cryptography. 5
- (c) Block sum check. 5
- 9.** (a) What do you mean by error detection and correction code ? Explain the Hamming code of seven bit. Find the Correct code if the received code is 1011010. There are 4 parity bits and parity is used. 12
- (b) Explain the Data compression techniques. With example of Encryption and Decryption. 8
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