

Roll No.

24042

**B. Tech. (3rd Sem.) Information
Technology (Branch – VI)
Examination – December, 2011**

DIGITAL 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.

1. (a) Explain Rayleigh probability density function, 5
(b) Explain Shannon limit, 5
(c) Differentiate between Half duplex and full duplex communication modes. 5
(d) Explain Run length encoding. 5
2. (a) Draw and Explain block diagram of a communication system. 10

(b) The F.T $G(f)$ of signal $g(t)$ is defined by

$$G(f) = \begin{cases} 1 & f > 0 \\ 1/2 & f = 0 \\ 0 & f < 0 \end{cases}$$

determine $g(t)$?

10

3. (a) Explain in detail, what are effects of limited Band width on digital signal ? 10

(b) State and explain various properties of Fourier Transform. 10

4. (a) Explain the three ways of wireless data propagation. 10

(b) What is Nyquist theorem ? What is the bit rate, if we want to digitize the human voice , assuming 8 bit per sample. 10

5. (a) Explain the physical layer interfaces RS 232, X.21. 10

(b) Compare the following transmission media

(i) Coaxial Cable (ii) Fiber Optic Cable 10

6. (a) Explain the telephone system 'PSTN'. 10
- (b) Explain the difference between the two transmission modes :
- (i) Serial transmission
- (ii) Parallel transmission 10
7. (a) Differentiate between connection-oriented and connectionless oriented services. 10
- (b) Differentiate between circuit switching and packet-switching systems in detail. 10
8. (a) Explain Huffman Encoding using suitable example. 10
- (b) Differentiate between secret key Encryption and public key Encryption. 10
9. Explain the following :
- (a) Cyclic Redundancy Check, 10
- (b) Run Length Encoding. 10
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