Roll No. ....

24042

B. Tech 3rd Semester (IT)
Examination – December, 2017

DIGITAL AND ANALOG COMMUNICATION

Paper : EE-217-F

Time : Three Hours]　　　　[Maximum Marks : 100

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

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.

1. Explain the following :　　　　　　　　4 × 5 = 20

(a) Effect of bandwidth on digital signal.

(b) What is delay distortion

(c) What is permanent virtual circuits.

(d) Forward-error control approaches

SECTION – A

2. (a) Find the Fourier transform of a unit step function. 　　　10

(b) State and prove Parseval's theorem for energy signals. 10

3. (a) Compare and contrast the various Digital Communication systems. 10

(b) Explain the digital and analog signal. 10

SECTION – B

4. (a) A sinusoidal carrier voltage of frequency 10 MHz and amplitude 200 volts is amplitude modulated by a sinusoidal voltage of frequency 10 KHz producing 40% modulation. Calculate the frequency and amplitude of upper and lower sidebands . 10

(b) Explain the advantage of optical fiber over twisted pair and coaxial cable. 10

5. (a) Write short note on Rs-232 and X.21 10

(b) Explain Nyquist and Shannon theorem for channel capacity. 10

SECTION – C

6. (a) What is Data Transmission ? Explain types of Data transmission. 10

(b) Explain different switching mechanism compare them with each-other. 10

7. (a) Write note on PSTN and ISDN. 10

(b) Explain asynchronous digital subscriber line. 10

SECTION – D

8. (a) Explain secret key cryptography and public key cryptography. 10

(b) What is cyclic code and explain cyclic redundancy check (CRC) code ? 10

9. (a) Explain 2-dimensional parity scheme of error detection. What are its error detection capabilities ? 10

(b) Find out the Huffman code for a discrete memory less source with probability statistics (0.1, 0.1, 0.2, 0.2, 0.4). 10

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