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[5252]-579

S.E. (IT) (Semester-II) EXAMINATION, 2017

FOUNDATIONS OF COMMUNICATION

AND COMPUTER NETWORK

(2015 PATTERN)

Time : Two Hours

Maximum Marks : 50

N.B. :— (i) Answer Question Nos. 1 or 2, 3 or 4, 5 or 6, 7 or 8.

(ii) Figures to the right indicate full marks.

(iii) Assume suitable data, if necessary.

1. (a) List the different propagation modes in fiber. Also draw a neat diagram to show total internal reflection phenomena in optical fiber. [6]

(b) Draw time domain representation of AM wave. A carrier of 1000 W is modulated with a resulting modulation index of 0.8. What is the total power ? [6]

Or

2. (a) The power of a signal is 10 mW and the power of the noise is 1 μ W. What are the values of SNR and SNR_{dB}? [6]

(b) Draw frequency domain representation of AM wave. A standard AM broadcast station is allowed to transmit modulating frequencies upto 5 kHz. If the AM station is transmitting on a frequency of 980 kHz, what are sideband frequencies and total bandwidth ? [6]

P.T.O.

3. (a) Explain the following shift keying Techniques with suitable examples :
(i) ASK
(ii) FSK
(iii) PSK [7]
(b) What is CRC ? Generate the CRC code for message 1101010101. Given generator Polynomial $g(x) = x^4 + x^2 + 1$. [6]
- Or*
4. (a) Draw and explain PCM and DM. [7]
(b) Explain in detail Go-Back-N & Selective Repeat ARQ System. [6]
5. (a) Write a short note on CSMA/CD. How is it useful for collision avoidance ? [6]
(b) Explain Statistical TDM and Synchronous TDM techniques. [6]
- Or*
6. (a) Compare FDMA, CDMA, TDMA. [6]
(b) Explain the various controlled access methods. [6]
7. (a) Compare and contrast circuit switched network with packet switched network. [6]
(b) Compare 100BASE-TX, 100BASE-FX, 100BASE-T4. [7]
- Or*
8. (a) Explain types of bridges with suitable diagram. [6]
(b) Explain the frame format for IEEE 802.3. [7]