Total No. of Questions—**8**] [Total No. of Printed Pages—**2**

Seat No.	

[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 μW. What are the values of SNR and SNR_{dB} ? [6]

(*b*) Draw frequency domain representation of AM wave. A stadard 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]