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[5057]-266**S.E. (I.T.) (Second Semester) EXAMINATION, 2016****FOUNDATION OF COMPUTER NETWORKS****(2012 PATTERN)****Time : Two Hours****Maximum Marks : 50****N.B. :—** (i) Answer any *four* questions.

(ii) Figures to the right indicate full marks.

(iii) Assume suitable data, if necessary.

1. (a) Explain amplitude modulation and frequency modulation. [6]
- (b) Calculate the bandwidth of noiseless channel having maximum bit rate of 24 Kbps and 4 signals levels. [7]

Or

2. (a) Explain in brief Shannon's capacity theorem for noisy channels. We have a channel with a 1 MHz bandwidth. The SNR for this channel is 63. Calculate the channel's maximum capacity. [7]
- (b) Explain parallel transmission and serial transmission. [6]
3. (a) What are the categories of twisted pair cable. Explain with applications. [6]
- (b) Explain the functions of Network layer ? [6]

P.T.O.

Or

4. (a) Explain guided and unguided signals. Give *two* examples of each. [6]
- (b) Explain with diagram time-space-time switches. [6]
5. (a) Explain the character oriented framing technique. [6]
- (b) If generator = $x^3 + x^2 + 1$ and $M(x) = x^7 + x^4 + x^3 + x$. Generate the CRC and show the checking method also. [7]

Or

6. (a) Explain the Go-back-n ARQ with sliding window. [6]
- (b) Explain with example two-dimensional parity check. [7]
7. (a) Write a short note on types of CSMA. [6]
- (b) Compare 100BASE-TX, 100BASE-FX, 100BASE-T4. [6]

Or

8. (a) Compare FDMA, CDMA, TDMA. [6]
- (b) Explain the HDLC frame format i.e. I-frame, S-frame, U-frame. [6]