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

| Seat No. | |
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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]