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

Seat No.	

[4857]-1089

S.E. (Information Technology) (Second Semester)

EXAMINATION, 2015

FOUNDATION OF COMPUTER NETWORKS

(2012 PATTERN)

Time : Two Hours **Maximum Marks : 50**

N.B. **:—** (*i*) Answer the Q. **1** or Q. **2**, Q. **3** or Q. **4**, Q. **5** or Q. **6**, Q. **7** or Q. **8**.

(*ii*) Neat diagrams must be drawn wherever necessary.

(*iii*) Figures to the right indicate full marks.

(*iv*) Assume suitable data, if necessary.

1. (*a*) Write a short note on Analog signals and Digital signals with the help of waveforms. [6]

(*b*) Write a short note on Spread Spectrum. [7]

Or

2. (*a*) State and explain the Nyquist theorem and Shannon capacity and solve the following example : [7]

Example : Calculate the maximum bit rate for noiseless channel with a Bandwidth of 3000 Hz transmitting a signal with two signal levels.

(*b*) Write a short note on transmission modes in detail. [6]

P.T.O.

3. (*a*) Explain guided media with suitable diagrams. [6]

(*b*) Explain TCP/IP protocol suit with layered architecture. [6]

Or

4. (*a*) Compare and contrast circuit switched network with packet switched network. [6]

(*b*) Explain different addressing schemes in TCP/IP model. [6]

5. (*a*) Write a short note on internet checksum. [6]

(*b*) What is CRC ? Generate the CRC code for message 1101010101. Given generator polynomial $g(x) = x^4 + x^2 + 1$. [7]

Or

6. (*a*) Discuss the concept of redundancy in error detection and correction. [7]

(*b*) Explain in detail Go-Back-N and Selective Repeat ARQ System. [6]

7. (*a*) Discuss Fast Ethernet technology in brief. State its specification. [6]

(*b*) Explain the HDLC frame formats i.e. I-frame, S-frame, U-frame. [6]

Or

8. (*a*) Explain TDMA and FDMA. [6]

(*b*) Explain CSMA and CSMA/CD. Also comment on the efficiency of each. [6]