Total No. of Questions—8] [Total No. of Printed Pages—3

Seat No.	

S.E. (Information Technology) (II Sem.) EXAMINATION, 2014

FOUNDATION OF COMPUTER NETWORKS

(2012 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*) Neat diagrams must be drawn wherever necessary.

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

(*iv*) Use of calculator is allowed.

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

1. (*a*) Explain the various transmission impairments in data communication. [6]

(*b*) List the Line Coding schemes in digital transmission. Explain Polar NRZ and Unipolar NRZ schemes. [6]

P.T.O.

Or

2. (*a*) Define spread spectrum. Explain FHSS and DSSS. [6]

(*b*) State and explain the Nyquist theorem and Shannon capacity and solve the following example :

Example : Calculate the maximum bit rate for noiseless channel with a bandwidth of 3000 Hz transmitting a signal with two signal levels. [6]

3. (*a*) What is circuit switching ? Explain circuit switching in detail with its advantages and disadvantages. [6]

(*b*) Explain TCP/IP protocol suite. [7]

Or

4. (*a*) Explain ISO/OSI model in detail [8]

(*b*) Write a short note on Fiber optic cable. [5]

5. (*a*) What is Hamming distance ? Explain it with an example. Explain simple parity check code. [7]

(*b*) Explain Error Detection and Correction in Block Coding. [6]

Or

6. (*a*) What is CRC ? Explain CRC generator and CRC checker with suitable example. [6]

(*b*) What is Checksum ? Describe in detail internet Checksum method with suitable example. [7]

7. (*a*) Explain FDMA, TDMA and CDMA in detail. [6]

(*b*) What is HDLC ? Explain with the help of its frame format. Describe all fields in detail. [6]

Or

8. (*a*) Explain CSMA and CSMA/CD in detail. [6]

(*b*) Differentiate : 10Base2, 10Base5 and 10BaseT specification. [6]