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

Seat No.	

[5152]-179

S.E. (II Sem.) (Information Technology) EXAMINATION, 2017
FOUNDATION OF COMPUTER NETWORKS
(2012 PATTERN)

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

N.B. :— (*i*) Answer Q. No. **1** *or* Q. No. **2**, Q. No. **3** *or* Q. No. **4**, Q. No. **5** *or* Q. No. **6**, Q. No. **7** *or* Q. No. **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*) Define computer networks. Discuss various types of networks topologies in computer network. [4]

(*b*) If a binary signal is sent over a 3 kHz channel whose signal-to-noise ratio is 20 dB, what is the maximum achievable data rate ? [4]

(*c*) What are the various factors used to evaluate the performance of network ? [4]

Or

2. (*a*) What are the differences between parallel and serial transmission ? List three different techniques in serial transmission. [6]

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

3. (*a*) Explain Pulse Code Modulation with suitable diagram. [6]

(*b*) What is circuit switching ? Explain circuit switching in detail with its advantages and disadvantages. [7]

P.T.O.

Or

4. (*a*) Explain ISO/OSI model in brief. What are the responsibilities of : [7]

(*i*) Physical Layer and

(*ii*) Network Layer ?

(*b*) What is DSL technology ? Distinguish between ADSL and HDSL. [6]

5. (*a*) Explain in detail Stop and Wait and Selective Repeat ARQ System. [7]

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

Or

6. (*a*) What is hamming distance ? Explain with example. Explain simple parity check code. [8]

(*b*) Define piggybacking and its usefulness. [5]

7. (*a*) Define controlled access and list three protocols in this category. Explain CSMA. [6]

(*b*) Compare and contrast HDLC with PPP. Which one is byte-oriented, which one is bit-oriented ? [6]

Or

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

(*b*) Explain the frame format for IEEE 802.3. [6]