Sub Code:NEC702B

Paper Id: 130723 Roll No:

B TECH
(SEM-VII) THEORY EXAMINATION 2019-20
DATA COMMUNICATION NETWORKS

Time: 3 Hours *Total Marks: 100*

Note: Attempt all Sections. If require any missing data; then choose suitably.

SECTION A

1. Attempt *all* questions in brief. 2 x 10 = 20

a. Name two source coding techniques in digital communication.
b. What do you mean by signal space representations?
c. Give two differences between LAN & MAN.
d. What are Collision-Free Protocols?
e. Can a host have more than one IP Address? Explain.
f. What are optimum receivers?
g. What are simplex & duplex communication systems?
h. Name two multiple access techniques.
i. What do you understand by ALOHA?
j. Define Sliding Window Protocols.

SECTION B

2. Attempt any *three* of the following: 10x3=30

a. Give some differences between deterministic and stochastic signals.
b. What are the goals & applications of data communication networking?
c. Discuss Limited-Contention Protocols. Write some difference between analog & digital communication systems?
d. Explain & give differences between **Hubs, bridges and switches.**
e. Describe Wavelength Division Multiple Access Protocols in detail.

SECTION C

3. Attempt any *one* part of the following: 10x1=10

a. Describe different communication channels and their characteristics.
b. Discuss components of digital communication system with block diagram.

4. Attempt any *one* part of the following: 10x1=10

a. Write a short note on Carrier Sense Multiple Access (CSMA) Protocols.
b. Explain Error performance Analysis of receivers for memory-less modulation.

5. Attempt any *one* part of the following: 10x1=10

a. Describe orthogonal frequency division multiplexing (OFDM) with block diagram & mathematical expressions.
b. Explain MIMO in detail.

6. Attempt any *one* part of the following: 10x1=10

a. What is Token Ring? Give difference between Fast & Gigabit Ethernet.
b. Define HDLC. Write a short note on Error Control, Flow Control.

7. Attempt any *one* part of the following: 10x1=10

a. Explain Static Channel Allocation in LANs and MANs.
b. Describe Wireless LAN Protocols in detail.