

# CBCS SCHEME

USN

--	--	--	--	--	--	--	--	--	--

15EC64

Sixth Semester B.E. Degree Examination, Aug./Sept. 2020

## Computer Communication Networks

Time: 3 hrs.

Max. Marks: 80

Note: Answer any FIVE full questions, choosing ONE full question from each module.

### Module-1

- 1 a. Outline the functions of various layers in TCP/IP with necessary diagram to show logical connection between layers. (08 Marks)  
b. Explain the various services of datalink layer. (08 Marks)

OR

- 2 a. Explain stop and wait protocol. Also explain with necessary diagrams how sequence and acknowledge numbers prevent duplication of frames. (10 Marks)  
b. Compare various physical topologies in a computer network. (06 Marks)

### Module-2

- 3 a. List the controlled access methods. Also explain reservation access method. (06 Marks)  
b. Summarize standard Ethernet implementations. (04 Marks)  
c. A pure ALOHA network transmits 200 bit frames on a shared channel of 200 kbps. What is the throughput if the system produces :  
i) 1000 frames per second  
ii) 500 frames per second  
iii) 250 frames per second. (06 Marks)

OR

- 4 a. Explain CSMA/CA protocol with a flow diagram. (08 Marks)  
b. Explain Ethernet frame. (04 Marks)  
c. A network using CSMA/CD has a bandwidth of 10Mbps. If the maximum propagation time is  $25.6\mu\text{s}$ , what is the minimum size of the frame? (04 Marks)

### Module-3

- 5 a. Compare two types of Bluetooth networks and also explain various layers of Bluetooth. (08 Marks)  
b. Explain in brief DHCP. (04 Marks)  
c. An organization is granted a block of addresses with the beginning address  $14.24.74.0/24$ . The organization needs to have 3 subblocks of addresses to use in its three subnets : one subblock of 10 addresses, one subblock of 60 addresses and one subblock of 120 addresses. Design the subblock. (04 Marks)

OR

- 6 a. Explain in brief various categories of connecting devices. (06 Marks)  
b. Explain the following :  
i) QoS  
ii) Congestion control. (04 Marks)  
c. Explain with a neat diagram virtual circuit packet switched network. (06 Marks)

**Module-4**

- 7 a. Explain with a neat diagram IP datagram format. (08 Marks)  
b. Illustrate with an example, Linkstate routing. (08 Marks)

OR

- 8 a. What is distance vector routing? Explain the various drawbacks of distance vector routing and a few solutions to overcome the same. (08 Marks)  
b. Explain with a diagram three phases of mobile IP. (08 Marks)

**Module-5**

- 9 a. Explain with a neat diagram, Goback-n protocol. (08 Marks)  
b. Explain TCP segment format. (08 Marks)

OR

- 10 a. Explain various services of UDP. (05 Marks)  
b. Compare connection oriented and connectionless services. (08 Marks)  
c. Suppose a TCP connection is transferring a file of 5000 bytes. The first byte is numbered 10001. What are the sequence numbers for each segment if data are sent in five segments, each carrying 1000 bytes? (03 Marks)

\*\*\*\*\*