Printed pages: 02 **Sub Code: NCS 601**

Paper Id: **110611** **Roll No:** | | | | | | | | | | |

B. TECH
(SEM- VI) THEORY EXAMINATION 2017-18
COMPUTER NETWORKS

Time: 3 Hours ***Total Marks: 100***

Note: 1. Attempt all Sections. If require any missing data; then choose suitably.

SECTION A

1. Attempt *all* questions in brief. **2 x10 = 20**

a. What are the applications of Computer Networks?
b. List the advantages and disadvantages of ring topology.
c. What is count-to-infinity problem?
d. Given the IP address 180.25.21.I72 and the subnet mask 255.255.192.0, what is the subnet address?
e. What is piggybacking?
f. Measurement of slotted ALOHA channel with infinite number of users show that the l0 percent of slots are idle.
(i) What is the channel toad?
(ii) What is the throughput?
g. Provide few reasons for congestion in a network.
h. How does transport layer perform duplication control?
i. If a binary signal is sent over a 3KHZ channel. Whose signal to noise ratio is 20db. What is the maximum achievable data rate?
j. Mention the use of HTTP.

SECTION B

2. Attempt any *three* of the following: **10 x 3 = 30**

a. Explain network topological design with necessary diagram and brief the advantagesand disadvantages of various topologies.
b. Discuss the issues in the data link layer and about its protocol on the basis of layeringprinciple.
c. What is congestion? Briefly describe the techniques that prevent congestion.
d. Enumerate on TCP header and working of TCP and differentiate TCP and UDP withframe format.
e. Elaborate about TELNET and its working procedure.

SECTION C

3. Attempt any *one* part of the following: **10 x 1 = 10**

(a) What is OSI Model? Explain the functions; protocols and services of each layer?
(b) Discuss the different physical layer transmission media.

4. Attempt any *one* part of the following: 10 x 1 = 10

(a) Discuss different carrier sense protocols. How are they different than collisions protocols?

(b) Write short notes on following:
   i. Stop and Wait ARQ
   ii. Sliding Window Protocol
   iii. Go Back N ARQ

5. Attempt any *one* part of the following: 10 x 1 = 10

(a) What is IP addressing? How it is classified? How is subnet addressing is performed?

(b) What is unicast routing? Discuss unicast routing protocols.

6. Attempt any *one* part of the following: 10 x 1 = 10

(a) Enumerate how the transport layer unsure that the complete message arrives at the destination and in the proper order.

(b) Explain the three way handshaking protocol to establish the transport level connection.

7. Attempt any *one* part of the following: 10 x 1 = 10

(a) Write short notes on any two of the following:
   i. DNS in the internet
   ii. Voice Over IP
   iii. File Transfer Protocol

(b) Explain the SNMP protocols in detail.