B.E. Information Technology Seven Semester

IT701 - Computer Networks

P. Pages : 2 **GUG/W/18/1812**

Time : Three Hours * 1 4 1 1 * Max. Marks : 80

Notes : 1. Same Answer book must be used for all questions.
2. All questions carry marks as indicated.
3. Due credit will be given to neatness and adequate dimensions.
4. Assume suitable data wherever necessary.
5. Illustrate your answers wherever necessary with the help of neat sketches.

1. a) Define computer networks ? Discuss various types of network topologies in computer network. Also discuss various advantages & disadvantages of each topology. **8**

b) What are the applications of computer networks ? **8**

OR

2. a) Explain the following : **8**
i) LAN ii) MAN
iii) WAN iv) ARPANET

b) What is TCP/IP model ? Explain the functions, protocols & services of each layer ? Compare with OSI model. **8**

3. a) Explain IEEE 802.3 Ethernet. **8**

b) Write short note on :

i) Binary countdown protocol. **4**

ii) Adaptive Tree work protocol. **4**

OR

4. a) Compare circuit switching, message switching & packet switching. **8**

b) Write short note on : **8**

i) Channel allocation problem.

ii) ALOHA & slotted ALOHA.

iii) Bit map protocol.

5. a) Construct a Hamming distance code for the given list using ODD faulty. **8**
1 0 0 1 0 1 0 0 0 1 0 1 0 1.

b) Write short note on : **8**

i) Character count.

ii) Character stuffing

iii) Bit stuffing

OR

6. a) Discuss sliding window protocol using selective 'Repeat & Go Back n'. **8**

b) Construct a CRC code for the given data & generator **8**
Data : 1010000
Generator : $x^3 + 1$.

7. a) Discuss Routing ? Explain Hierarchical Routing in detail. **8**

b) Explain IP Header with a neat diagram. **8**

OR

8. a) Define IP Address. Explain the various classes of IP Addresses with example. **8**

b) Write short notes on : **8**

i) Leaky Bucket algorithm.

ii) Choke packet

iii) Titler control

iv) Hop by Hop Choke packet.

9. a) Explain the Quality of services of transport layer. **8**

b) Discuss TCP Header in detail. **8**

OR

10. Write short notes on : **16**

i) UDP

ii) WWW

iii) DNS

iv) Email.

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