B.E. (Computer Engineering) Third Semester (C.B.S.)

Introduction to Computer Network Paper - V

P. Pages : 2 **TKN/KS/16/7339**

Time : Three Hours * 1 0 9 2 * Max. Marks : 80

Notes : 1. All questions carry marks as indicated.
2. Solve Question 1 OR Questions No. 2.
3. Solve Question 3 OR Questions No. 4.
4. Solve Question 5 OR Questions No. 6.
5. Solve Question 7 OR Questions No. 8.
6. Solve Question 9 OR Questions No. 10.
7. Solve Question 11 OR Questions No. 12.
8. Assume suitable data whenever necessary.
9. Illustrate your answers whenever necessary with the help of neat sketches.

1. a) Explain types of communication in detail. **7**

b) Compare different type of topology with respect to performance, reliability and security. **6**

OR

2. a) Explain Design issues for the layers. **6**

b) Explain ISO-OSI model in detail. **7**

3. a) Write performance comparison of Analog and digital transmission. **6**

b) For a binary PCM system, the no. of bits per transmitted word is 8 and the sampling frequency $f_s = 8kHz$. Calculate the bitrate and baud rate. **4**

c) Explain Shannon's channel capacity. **3**

OR

4. a) Determined the maximum bit rate for a channel having bandwidth equal to 1600 Hz if: **6**

i) S/N ratio is 0dB

ii) S/N ratio is 20dB.

b) Explain transmission media in detail. **7**

5. a) Explain design issues for the data link layer. **4**

b) What are the framing methods in data link layer? **6**

c) Which services are provided by data link layer to network layer. **4**

OR

6. a) If the 7 – bit Hamming codeword received by a receiver is 1011011. Assuming the even parity, State whether the received codeword is correct or wrong. If wrong, locate the bit in error. **6**

b) Short note on **any two.** **8**

i) IEEE 802.5 ethernet frame format.

ii) Go-back n ARQ system

iii) Sliding window protocol.

7. a) Explain Bellman-Ford algorithm in detail. **7**

b) Difference between virtual circuit subnet and datagram subnet. **6**

OR

8. a) What is congestion? What are the causes of congestion? **6**

b) What are the congestion prevention policies? **7**

9. a) Explain quality of service parameters for transport layer. **7**

b) Explain TCP segment header in detail. **7**

OR

10. a) Short note on socket. **5**

b) Explain TCP transmission policy. **5**

c) Short note on silly window syndrome. **4**

11. a) Explain design issues for the session layer. **6**

b) Justify the presentation layer carries out the job of transition. **7**

OR

12. Short note on **any three.** **13**

i) Domain Name System.

ii) Digital signature.

iii) Architecture of browser

iv) Data compression techniques.

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