B.E. (Computer Science Engineering) Sixth Semester (C.B.S.)

Computer Networks

P. Pages : 2 **NRJ/KW/17/4548**

Time : Three Hours * 0 1 3 1 * 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 in detail about layers in OSI reference model. **6**

b) Write the difference between service and protocols. Also list and explain the different service primitives. **4**

c) Explain the design issues of OSI model layer. **3**

OR

2. a) State and explain the significance of studying topology. Explain any four topologies with their advantages and disadvantages. **7**

b) Explain the difference between connection oriented and connection less protocols. **6**

3. a) Explain the different error detection and correction techniques. **7**

b) What is framing? Explain the different types of framing with example? **6**

OR

4. a) Explain HDLC. What are the three frames of HDLC, explain with example. **6**

b) Explain the selective repeat ARQ protocol. **7**

5. Write a short note on following Multiple Access Protocols. **14**

i) Pure ALOHA

ii) Slotted ALOHA

iii) CSMA - CD

OR

6. a) Write a short note on following controlled Access Protocols. **8**

i) Token Ring

ii) Polling

b) Write down the difference between FDMA, TDMA, CDMA. **6**

7. a) Explain the significance of optimal Routing Number in Hierarchical Routing. **5**

b) What is the cause for count to infinity problems in distance vector routing algorithm. **3**

c) Explain shortest path algorithm for routing. **6**

OR

8. Explain following Routing protocols. **14**

i) Flooding

ii) Distance Vector Routing

iii) Link Stat Routing

9. Explain following congestion control algorithms. **13**

i) Choke packets

ii) Leaky Bucket

iii) Token Bucket

OR

10. a) Explain IPV_4 and IPV_6 header formats. **6**

b) Explain ARP and RARP protocols. **7**

11. a) Why does UDP exists? Explain UDP segment format. **5**

b) Why does maximum packet lifetime, T, have to large enough to ensure that not only the packet but also its acknowledgements have vanished. **4**

c) How the crash recovery is handled by transport layer. What are the difficulties in crash recovery process? **4**

OR

12. a) Explain the task perform by transport layer with respect to following. **5**

i) Addressing

ii) Connection Establishment

iii) Connection Release

b) Explain the fields in TCP header in detail. **4**

c) Write a short note on : **4**

i) Domain Name System

ii) Name Server

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