

2008-PUNJAB TECHNICAL UNIVERSITY
B.E VI SEMESTER DEGREE EXAMINATION
COMPUTER NETWORKS
(COMPUTER SCIENCE AND ENGINEERING)

TIME-3HOUR
MARKS-100

PART-A [1082=20 MARKS]

1. Why network software is organized as a series of layer?
2. What are the two kinds of light sources used in fiber cables?
3. Reliability of CRC is better than that of simple parity and LRC. Justify this statement.
4. What is meant by bit stuffing?
5. Write short notes on virtual circuit organization of the subnet.
6. Differentiate between adaptive and non-adaptive routing algorithms.
7. What is meant by upward and downward multiplexing.
8. Mention some applications where UDP is preferred over TCP?
9. Mention the layer in which email gateway function. Also mention some of its applications
10. Define encryption

PART-B [5*16=80 MARKS]

- 11.i) Compare OSI and TCP / IP reference models on form of their merits and demerits.
- ii) Differentiate between broadcast networks and point to point networks.
- 12.a)i) Explain the CSMA/CD protocol with binary exponential back off algorithm used internet.
- ii) Assume that a network can cover a distance of 5000 meters and the RTT is 100 μ sec of the network operates at a speed of 20Mbps. What should be the minimum frame size to employ CSMA / CD?

(OR)

- 12.b)i) Explain the sliding window protocol and compare its performance against the simple stop and wait protocol.
- ii) Given message is $M(X) = X^5 + X^4 + X + 1$ and the generator is $G(X) = X^4 + X^3 + 1$ Compute CRC.
- 13.a)i) Explain the distance vector routing algorithm.
- ii) Find the shortest path from node A to node D in the following network using the Bell mark kord routing algorithm.

(OR)

- 13.b)i) Given three IP addresses are 32.46.7.3, 200.132.110.35 and 140.75.8.92. Find their classes, network

addresses, broadcast address and their subnet marks.

ii) Explain the token bucket algorithm and compare its performance against the leaky bucket algorithm

14.a)i) Explain the Bresnahan handshake protocol used to establish the connection in the transport layer. Also explain the protocol used to release the connection.

ii) Explain the transport service access point and the various schemes used by the transport layer to find the TSAP at a server.

(OR)

14.b)i) Explain the various fields of TCP header.

ii) Write short notes about the pseudo header included in the TCP checksum.

iii) Draw the UDP header and explain its fields

15.a) Explain the DNS in terms of name space, resource record and name server.

(OR)

15.b) Explain the architecture of WWW as on client / server application

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