

[07 - 4121]

IV/IV B.Tech. DEGREE EXAMINATION

First Semester

Computer Science and Engineering

COMPUTER NETWORKS

(w.e.f. admitted batch of 2006-2007)

Time : Three hours

Maximum : 70 marks

First question is compulsory.

Answer any FOUR from the remaining questions.

All questions carry equal marks.

Answer all parts of any question at one place.

1. (a) Explain Frame Relay.
(b) Explain Virtual Path Identifier (VPI).
(c) Explain functions of Bridge.
(d) Explain Transmission services.
2. Define the following parameters for a switching network :
N = number of hops between two given end systems
L = message length in bits

B = data rate, in bits per second (bps), on all links.

P = fixed packet size, in bits

H = overhead (header) bits per packet

S = call setup time (circuit switching or virtual circuit) in seconds.

D = propagation delay per hop in seconds.

For $N = 4$, $L = 3200$, $B = 9600$, $P = 1024$, $H = 16$, $S = 0.2$, $D = 0.001$, compute the end-to-end delay for circuit switching, virtual circuit packet switching, and datagram packet switching. Assume that there are no acknowledgments. Ignore processing delay at the nodes.

3. (a) Explain how ATM cells are transmitted.
- (b) Describe ATM protocol architecture with its service categories.
4. Discuss Frame relay congestion control.
5. Discuss principles of cellular Networks.
6. (a) Describe two level star topology.
- (b) Give description of CSMA/CD CSMA.

7. (a) Explain Multicasting.
 - (b) Describe IEEE 802.11 architecture.
 8. (a) Describe TCP Header Format.
 - (b) Give an overview of SMTP.
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