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Total No. of Pages: 02
Total No. of Questions: 09

B.Tech.(CSE, IT) (Sem.-4th)
COMPUTER NETWORKS
Subject Code : BTCS-403
Paper ID: [A1185]

Time: 3 Hrs.

Max. Marks: 60

INSTRUCTIONS TO CANDIDATE:

- 1) *Section-A is Compulsory.*
- 2) *Attempt any Four questions from Section-B.*
- 3) *Attempt any Two questions from Section-C.*

SECTION-A

(10x2=20)

Q.1. Answer briefly:

- a) What are the major advantages of STP over UTP?
- b) Describe the components of fibre optic cable. Draw a picture.
- c) What is the difference between network layer delivery and transport layer delivery?
- d) How can a device have more than one IP address?
- e) Which control bit is involved in setting up a TCP session?
- f) What factors effects the data rate of a link?
- g) What are the advantages of FDDI over a basic token ring?
- h) What is the purpose of the timer at the sender in systems using ARQ?
- i) Is there any drawback of using piggybacking?
- j) How many bits are consumed by IPv4 and IPv6 addresses respectively?

SECTION-B

(4x5=20)

- Q.2. Draw the IP datagram header format. "IP datagram has a checksum field still it is called an unreliable protocol". Justify?
- Q.3. What are the two reasons for using layered protocols? What do you mean by link to link layers of OSI reference model? Explain their functions briefly?
- Q.4. A binary signal is sent over a 3-khz channel whose signal-to-noise ratio is 20 db. Calculate the maximum achievable data rate?
- Q.5. Contrast link state and distance vector routing protocols, giving an example of each. What is count to infinity problem?
- Q.6. How does a token ring network work? In what way is it different from Ethernet?

SECTION-C

(2x10=20)

- Q.7. a) What is packet switching? Explain two different approaches of packet switching?
b) Discuss the different factors affecting congestion control algorithms?
- Q.8. Consider the three-way handshake in TCP connection setup.
(a) Suppose that an old SYN segment from station A arrives at station B, requesting a TCP connection. Explain how the three-way handshake procedure ensures that the connection is rejected.
(b) Now suppose that an old SYN segment from station A arrives at station B; followed a bit later by an old ACK segment from A to a SYN segment from B. Is this connection request also rejected?
- Q.9. a) Explain the working of 3 bit sliding window protocol with suitable example,
b) Explain the following ARQ techniques in detail
i) Stop and wait ARQ.
ii) Selective repeat ARQ

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