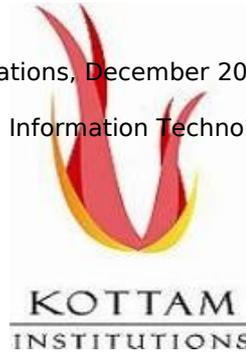III B.Tech I Semester(R05) Supplementary Examinations, December 2009
COMPUTER NETWORKS
(Common to Computer Science & Engineering and Information Technology)
Time: 3 hoursMax Marks: 80
Answer any FIVE Questions
All Questions carry equal marks

KOTTAM
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1. (a) What are the advantages of having layered architecture? Mention the layers of ISO-OSI reference model?

   (b) What is Internet? Mention some of the applications of Internet?   [8+8]

2. (a) Television channels are 6MHz wide. How many bits/sec can be sent if four level digital signals are used? Assume a noiseless channel.

   (b) How does a virtual circuit differ from a physical circuit? What advantages would a virtual circuit provide? [8+8]

3. (a) What is flow control? Why is it essential at the data link layer? Mention few techniques for the same?

   (b) Explain how the band width wastage is reduced in case of sliding window protocol with selective repeat? [8+8]

4. (a) Compare the five different types of cabling (Ethernet)

   (b) A 1-km long, 10-Mbps CSMA/CD LAN (not 802.3) has a propagation speed of 200 m/μsec. Data frames are 256 bits long, including 32 bits of header, checksum, and other overhead. The first bit slot after a successful transmission is reserved for the receiver to capture the channel to send a 32-bit acknowledgement frame. What is the effective data rate, excluding overhead, assuming that there are no collisions?[8+8]

5. (a) Explain any two applications for which flooding is preferred over Distance vector routing.

   (b) If network topology never changes, which of the routing protocols, Shortest path routing & Distance vector routing is preferred and why.[8+8]

6. (a) How congestion is controlled in V.C. subnets?

   (b) What is Choke packet? How does the choke packets helps in congestion control?

                                                                                                [8+8]

7. (a) How flow control at Transport layer is different from flow control at Data link layer?

   (b) What is buffering? Give the Pros and Cons of fixed sized & variable sized buffers.

   (c) Compare buffering at sender with buffering at receiver.   [6+5+5]

8. (a) What are the fields in message header of e mail system?

   (b) What are SMTP types & subtypes? Explain them.   [6+10]