

Code No: A5803

JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD

M.Tech I SEMESTER EXAMINATIONS, APRIL/MAY-2012

COMPUTER COMMUNICATIONS

(COMPUTER SCIENCE & ENGINEERING)

Time: 3hours

Max. Marks: 60

Answer any five questions

All questions carry equal marks

- 1.a) Why are protocols and standards needed?
- b) What are the layers in the OSI reference model? What are the responsibilities of each of these layers?

- 2.a) Why is coaxial cable superior to twisted-pair cable?
- b) Discuss the modes for propagating light along optical channel.
- c) What are the disadvantages of optical fiber as a transmission medium?

- 3.a) Explain the role of multiple access protocols.
- b) In the IEEE 802.11 specification, the length of the SIFS period must be shorter than the DIFS period. Why?
- c) Suppose the IEEE 802.11 RTS and CTS frames were as long as the standard DATA and ACK frames. Would these be any advantage to using the CTS and RTS frame? Why?

- 4.a) Compare and contrast link state and distance vector routing algorithms.
- b) What is congestion? Compare various congestion control algorithms.

- 5.a) Describe why an application developer may choose to Run an application over UDP rather than TCP.
- b) Suppose host A sends two TCP segments back to back to host B over a TCP connection. The first segment has sequence number 90; the second has sequence number 110.
 - i) How much data is in the first segment?
 - ii) Suppose that the first segment is lost but the second segment arrives at B. In the acknowledgment that host B sends to host A, what will be the acknowledgment number?

- 6.a) Describe the role of Domain Name System (DNS) in a content distribution network.
- b) What is dynamic HTML? Explain.
- c) List five nonproprietary Internet applications and the application layer protocols that they use.

- 7.a) What are the differences between message confidentiality and message integrity? Can you have one without the other? Justify your answer.
- b) Discuss the differences between a symmetric key system and a public key system.

8. Write short notes on:
 - a) E-mail security
 - b) World Wide web
 - c) Bluetooth.
