**Q.2**     **a.  What is a network? Explain the differences between Local Area Networks and Wide Area Networks with suitable diagrams.**
**Answer:** Refer page numbers 7 and from 13 to 15

  **b.  What do you mean by OSI model? What are the various layers in this model? Mention the functions of Transport and Presentation Layer.**
**Answer:**  Refer page numbers 29, 30 and from 37 to 41

 **Q.3    a.  Define and briefly explain the following:**
    *Data rate, Bandwidth, Noise and Error rate.*
**Answer:** Refer page numbers 78

  **b.  What is meant by Wireless Transmission media? What are the various ways of transmission in this media? Explain Microwave Transmission.**
**Answer:** Refer page numbers 90 & 91

**Q.4     a.  Distinguish between analog data and digital data.**
 **Answer:** Refer page numbers 57 & 58

  **b.  How an error occurs in digital transmission systems? Discuss various types of errors that can occur.**
**Answer:** Refer page numbers from 267 to 269

  **c.  Explain digital logic of the CRC process.**
**Answer:** Refer Page no. 179

**Q.5      a.  Discuss Stop-and-Wait Automatic Repeat Request Protocol in detail.**
**Answer:** Refer page numbers 318 & 319

  **b.  What is Time Division Multiplexing? Explain Statistical Time Division Multiplexing with suitable diagrams.**
**Answer:** Refer page numbers 169, 179 & 180

**Q.6      a.  Explain the principle of Packet Switching network with a neat Diagram.**
**Answer:** Refer page number 214

  **b.  Compare the differences between Adaptive Routing and Fixed Routing.**
**Answer:** Refer page numbers from 662 to 670

  **c.  Briefly explain three general categories of explicit congestion signalling approach.**
  **Answer:** Refer page number 364

**Q.7 a. Categorize the topologies used in LANs and explain briefly about Bus Topology with a diagram.**
**Answer:** Refer page numbers 9, 11 & 12

**b. What is the need for Fast Ethernet? What are its main features? Why is there no need for CSMA/CD in Fast Ethernet?**
**Answer:** Refer page numbers 409

**c. What is Bluetooth? What are its Applications?**
**Answer:** Refer page numbers 434 & 435.7 and from 13 to 15

**Q.8 a. Explain the principle of Internetworking with a neat diagram.**
**Answer:** Refer page numbers from 579 to 581

**b. What is IPv4? What are the deficiencies in IPv4?**
**Answer:** Refer page number 596

**c. Explain the reason for the elimination of the checksum in the IPv6 header.**
**Answer:** Refer page numbers from 597 to 601

**Q.9 Write short notes on any <u>TWO</u> of the following:-**

**a. Multicast Routing Protocols.**
**Answer:** Refer page numbers from 684 to 690

**b. User Datagram Protocol (UDP).**
**Answer:** Refer page numbers from 709 to 715

**c. Electronic Mail.**
**Answer:** Refer page numbers from 831 to 838

## <u>TEXT BOOK</u>

**Data communications and networking by BEHROUZA FOROUZAN, The McGraw-Hill Companies Publishers, 2006 edition.**