(3 Hours)   **[Total Marks: 80]**

N.B.: (1) Question No.1 is compulsory.
(2) Attempt any three questions from the remaining five questions.
(3) Make suitable assumptions wherever necessary but justify your assumptions

1. a) Compare Ring and Star topology   5
   b) Use RLE method of compression to compress the following data:
      Data: AAAACCBBBDDDDDDEFF   5
   c) Explain the TCP connection establishment with relevant diagram   5
   d) Compare LAN MAN and WAN   5

2. a) What is the OSI Model? Give functions and services of each layer. 10
   b) Discuss the different networking devices used for internetworking. 10

3. a) What is Domain Name system? How does it work? Explain the resolution process 10
   b) Explain the different transmission media in networking.   10

4. a) What is congestion and what are its causes? Explain Token bucket algorithm for
      congestion control   10
   b) Explain the TCP header format   10

5. a) Compare Static and Dynamic Routing and explain any one with an example. 10
   b) Explain stop and wait protocol. What are its drawbacks? How can they be overcome? 10

6. Write a note on (any two)   20
   a. RPC
   b. CSMA/CD
   c. IP Addressing

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