

**[Time: 3 Hours]****[Total marks: 80]**

N.B. (1) Question 1 is compulsory.

(2) Attempt any three from remaining five questions.

1. (a) Explain different types of transmission impairments. **10**
  - (b) Explain HTTP and SMTP protocols in application layer. **10**
  2. (a) Explain four way handshaking for TCP connection termination. **10**
  - (b) Differentiate between **10**
    - i) RIP and OSPF
    - ii) ARP and RARP
  3. (a) Explain the terms: Intranet, Internet and Extranet **10**
  - (b) Given the Class C network 192.168.10.0 uses the subnet mask 255.255.255.192 to create subnets, on this basis answer the following: **10**
    - i) How many subnets are created?
    - ii) How many hosts per subnet?
    - iii) Design the address allocation of each subnet.
  4. (a) What is topology? What are different types of topologies? List the advantages and disadvantages of each type. **10**
  - (b) Calculate the CRC for the following bit stream 1101011011 using divisor 10011 and write codeword **10**
  5. (a) What are the different types of transmission media? Explain types of various types of unguided media? **10**
  - (b) What is interdomain routing? Explain BGP routing protocol in detail. **10**
  6. Write short notes on any FOUR. **20**
    - a) Domain Name System
    - b) Source Routing Bridge
    - c) Code Division Multiple Access
    - d) Optimality Principle
    - e) Asynchronous Transfer Mode
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