(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.

Q.1. Solve **any four**
    a. Compare Twisted pair cable, Coaxial cable and Fiber optics cable.   05 M
    b. Explain Ethernet Protocol.   05 M
    c. Explain Repeater, Hub, Bridge, Switch, and Gateway.   05 M
    d. Compare lossy with lossless data compression technique.   05 M
    e. How many networks and hosts are possible using 'Class B' IP addressing?   05 M
       What is subnet mask?

Q.2.a. Draw and Explain OSI reference model with functions of each layer.   10 M
Q.2. b. Explain the difference between static and dynamic routing. Explain distance vector
     routing.   10 M

Q.3.a. Explain CSMA protocols. Explain how collisions are handled in CSMA /CA.   10 M
Q.3.b. A bit stream 1101011011 is transmitted using the standard CRC method.

  The generator polynomial is x^4+x+1.

  i)   What is the actual bit string transmitted?
  ii)   Suppose the third bit from the left is inverted during transmission. How will the receiver
       detect this error?   10 M

Q.4.a. Draw and explain guided and unguided transmission media.   10 M
Q.4.b. Explain Go-Back-N protocol.   .   10 M

Q.5.a. Explain in detail TCP congestion control mechanism.   10 M
Q.5.b. What is IP addressing? Explain in detail Classful and Classless IP address   10 M

Q.6.Write a short note on (Any Four)   20 M
    a. RPC
    b. FTP
    c. VPN
    d. VLAN
    e. HTTP

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