

(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