

(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. Explain Repeater, Hub, Bridge, Switch, and Gateway. 05 M
- b. Explain Token passing controlled access protocol. 05 M
- c. Explain in detail Network Address Translation. 05 M
- d. Compare connection oriented and connectionless lossy protocols. 05 M
- e. Explain Image compression GIF and JPEG. 05 M

Q.2.a. Draw and Explain OSI reference model with neat diagram. 10 M

Q.2. b. Explain IPv4 header format with diagram. 10 M

Q.3.a. Explain CSMA protocols. Explain how collisions are handled in CSMA /CD. 10 M

Q.3.b. A bit stream 10110 is transmitted using the standard CRC method.

The generator polynomial is  $x^3+x^2+1$ .What is the actual bit string transmitted?

How will the receiver detect data received without any error? 10 M

Q.4.a.Explain following transmission media - Twisted pair, Coaxial Cable, Fiber Optic. 10 M

Q.4.b.Explain concept of sliding protocol? Compare the performance of Go-back-N and Selective Repeat protocol. 10 M

Q.5.a.What is IP addressing? Explain in detail Classful and Classless IP addresses. 10 M

Q.5.b. Explain in detail TCP congestion control mechanism. 10 M

Q.6. Write a short note on (Any four) 20 M

- a. RPC
- b. DNS
- c. VLAN
- d. SNMP
- e. OSPF