

Time: 3Hrs

Total Marks: 80

N.B.:

1. Question no.1 is compulsory.
2. Attempt any three questions from the remaining five questions.
3. Total four questions need to be solved.
4. Assume suitable data whenever necessary, justify the same.

Q.1 Attempt any four questions

- Q.1 a** Explain the persistent strategies in CSMA. [5]
- Q.1 b** Compare switch and router [5]
- Q.1 c** Explain the working of HFC. [5]
- Q.1 d** Differentiate between Star and Mesh topology. [5]
- Q.1 e** List the algorithm steps of Link state routing. [5]

Q.2 a Explain types of ALOHA and derive the expression for efficiency of slotted ALOHA. [10]

Q.2 b Analyze how CSMA/CA protocol helps in collision avoidance. [10]

Q.3 a Draw and explain function of each layer of OSI reference model. Also explain advantage, disadvantages of the OSI model. [10]

Q.3 b Explain classful and classless addressing schemes in detail. [10]

Q.4 a Explain Border Gateway Protocol (BGP) as an inter-domain routing protocol. [10]

Q.4 b Explain in brief different types of medium access control schemes. [10]

Q.5 a What is Network Congestion? State types of congestion control mechanisms in TCP and explain with neat diagrams. [10]

Q.5 b Draw and explain each field of IPv4 datagram. [10]

Q.6 Write a short note on the following. [20]

- a Guided and unguided medium
- b IPv6 datagram
- c Distance vector algorithm
- d Telnet and SSH
