

- N.B. : (1) Question No. 1 is compulsory.
 (2) Attempt any four questions out of remaining six questions.
 (3) Illustrate answers with sketches wherever required.
 (4) Figures to the right indicate marks.

Q. No. 1)

[20]

- Explain the difference between a connection oriented and connectionless service.
- What is data transparency? Explain bit stuffing and destuffing.
- What is collision and broadcast domain? How can they be reduced?
- Explain ALOHA and Slotted ALOHA.

Q. No. 2)

- What does the term error control mean in data link layer? Explain Go back N and selective repeat ARQ protocols. [10]
- Explain count to infinity problem with an example and a method to avoid this Problem. [10]

Q. No. 3)

- Compare circuit switching, packet switching and message switching in detail. [10]
- Explain TCP header in detail. [10]

Q. No. 4)

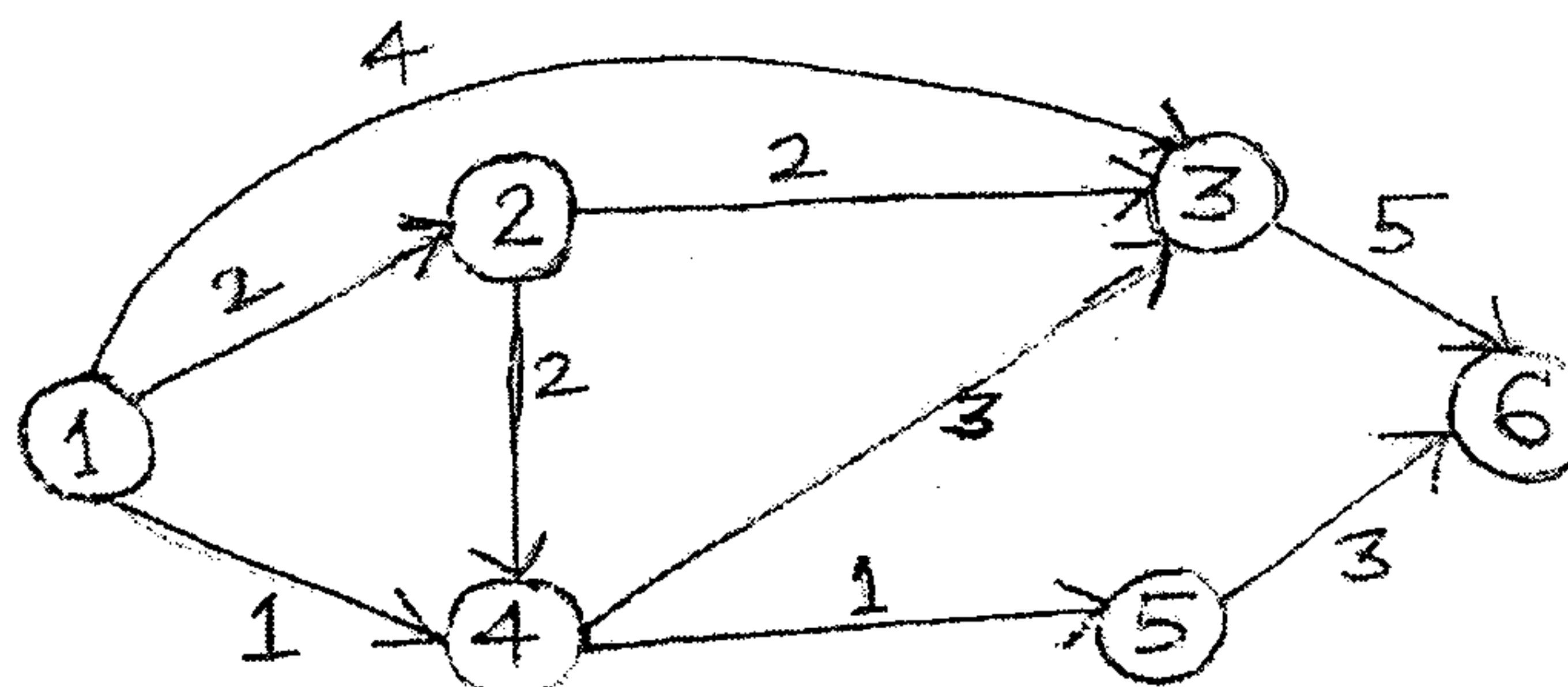
- Explain in detail repeaters, hub, bridges, routers, gateway and switches. [10]
- What is exterior and interior routing? Explain in brief distance vector routing and Link state routing. [10]

Q. No. 5)

- Explain HDLC frame format. Describe configuration and response modes supported by HDLC protocol. [10]
- Explain looping problem in bridge LAN with appropriate example. How to solve it. [10]

Q. No. 6)

- Write a note on IEEE 802.3 standard in detail. [10]
- Find the shortest path between the source node 1 to all other nodes for the network given below using Dijkstra's algorithm. Also draw the shortest path tree from node 1 to all other nodes. [10]



Q. No. 7) Write short notes (Any two):

[20]

- M/M/I model
- ARP and RARP
- ICMP