

**International Islamic University Chittagong**

Department of Computer Science and Engineering

B. Sc. in CSE, Final Exam, Spring 2023

Course Code: CSE 3633

Time: 2 hours 30 minutes

Course Title: Computer Networks

Full Marks: 50

Answer all of the following questions. The figures in the right-hand margin indicate full marks

**Group: A**

1. a) Apply LSR algorithm on the following network in fig-1 to construct a routing table of router 'B'. CO2 Ap 5

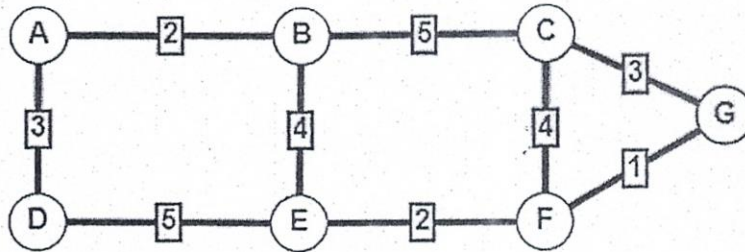


Fig-1

1. b) Apply DVR algorithm on the above network in fig-1 to construct a routing table of router 'B'. CO2 Ap 5

**OR**

1. b) Computer A has 100MB data to send on a network and transmits the data in a burst @20 Mbps. The maximum transmission rate across routers in the network is 10 Mbps. If Computer A's transmission is shaped using a leaky bucket with sufficiently large size then what is the required time it will take to send into the network? What is the bucket size? CO2 Ap 5

2. a) Explain Address Resolution Protocol with figure. CO1 U 5

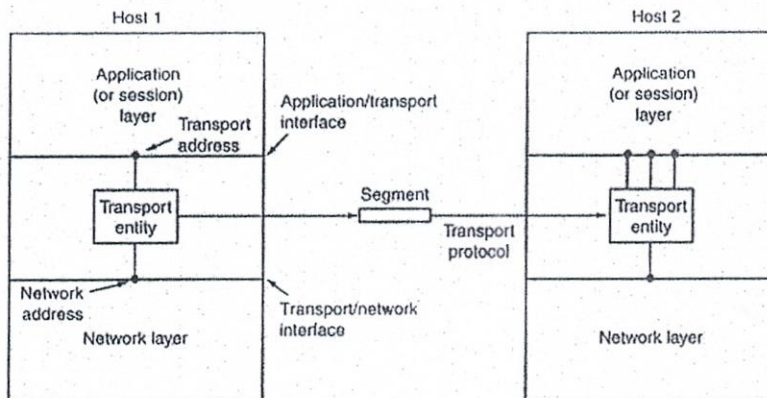
**OR**

2. a) Explain Explicit Congestion Notification with figure. CO1 U 5

2. b) Write short notes on Broadcast, Anycast and Multicast routing. CO1 U 5

**Group: B**

3. a) Given the following figure, explain roles of layers, entities and addresses: CO2 An 5



3. b) Explain nesting of segments, packets and frames with figure and how these data units are processed at different network layers. CO4 An 5
4. a) Explain the TCP Congestion Control Mechanism of the Transport Layer. CO3 Un 5
4. b) Explain whether reliable connection release is possible in the transport layer or not. CO3 Un 5
- OR**
4. b) TCP uses a Transmission Timer to retransmit lost segments. Discuss the Transmission Timer with a figure. CO3 Un 5
5. a) Suppose you have registered your newly created website named www. cse.iiuc.ac.bd with a DNS server. Describe the DNS iterative query for searching the IP address of your cse web server with proper diagram. CO4 Un 5
5. b) Describe the architecture of email and compare between the POP3 and IMAP protocol. CO4 Un 5
- OR**
5. b) Compare and contrast the client-server architecture with the peer-to-peer architecture within the application layer. CO4 Un 5