


Name:	
Enrolment No:	

UPES
End Semester Examination, May 2023

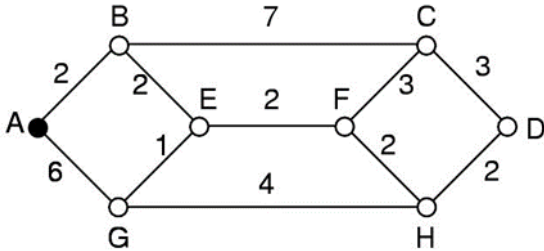
Course: Computer Networks **Semester: 4th**
Program: BCA **Time: 03 hrs.**
Course Code: CSBC2022 **Max. Marks: 100**

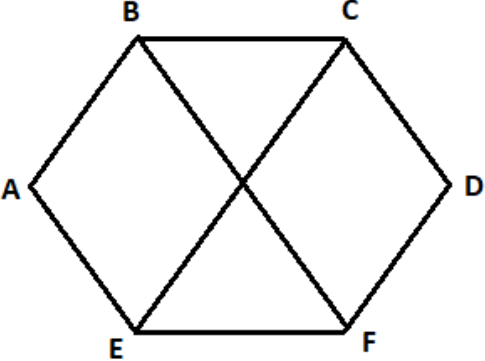
Instructions: All Questions are compulsory. Please attempt the questions in serial order.

SECTION A
(5Qx4M=20Marks)

S. No.	Question	Marks	CO
Q 1	What is the principal difference between circuit switching and packet switching?	4	CO1
Q2	A token ring with 4 Mbps and timer hold token is 10 msec. Determine the longest frame on ring that can be sent.	4	CO1
Q3	Given the subnet Mask 255.255.255.192 . What is the host address and subnet of the following IP address 197.1.2.67.	4	CO2
Q4	What is framing? Describe any two methods of framing with example.	4	CO2
Q5	List out difference between pure ALOHA and slotted-ALOHA.	4	CO3

SECTION B
(4Qx10M= 40 Marks)

Q6	Find the shortest path using Dijkstra’s routing algorithm from source node ‘A’ to remaining vertices in the following graph. <div style="text-align: center; margin: 10px 0;">  </div>	10	CO3
Q7	Discuss about (a) concept of leaky bucket algorithm? (b) token bucket algorithm with neat diagram	10	CO3
Q8	What is multiplexing? Describe various multiplexing methods with suitable examples.	10	CO3
Q9	What is encoding? For the given bit streams 1 0 0 0 0 1 0 1 1 1 perform the following encoding schemes. (a) NRZ L (b) NRZ I (c) Manchester encoding	10	CO3

	<p>(d) Differential Manchester encoding OR A 1-km long, 10 Mbps CSMA/Cd LAN (not 802.3) has propagation speed of 200 m/μsec. Data frames are 256 bits long, included 32 bits of header, checksum, and other overhead. The first bit slot after a successful transmission is reserved for the receiver to capture the channel to send a 32-bit acknowledgement frame. What is the effective data rate, excluding overhead assuming that there are no collisions.</p>		
SECTION-C (2Qx20M=40 Marks)			
<p>Q10</p>	<p>Write the steps involved in distance vector routing algorithm. In the figure given below, distance vector routing is used, and Router C has received the following vectors from B:(5, 0, 8, 12, 6, 2), D: (16, 12, 6, 0, 9, 10) and E: (7, 6, 3, 9, 0, 4). The measured delays to B, D, E are 6, 3 and 5 respectively. Determine C's new routing table and determine the outgoing line.</p> <div style="text-align: center;">  </div>	<p>20</p>	<p>CO4</p>
<p>Q11</p>	<p>Explain about the TCP header and working of TCP protocol and differentiate between TCP and UDP with frame format. OR Describe the major functions performed by data link layer? Explain the working procedure of error control protocols with neat diagrams: (a) Stop and Wait ARQ (b) Go-Back-n ARQ (c) Selective Reject ARQ</p>	<p>20</p>	<p>CO5</p>