

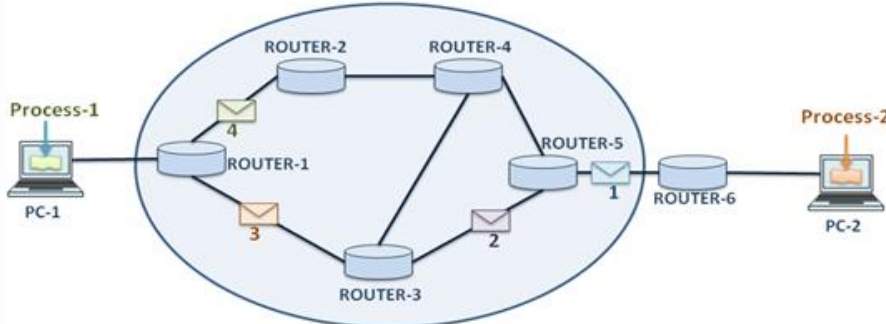


Academic year 2023-2024 (Even Sem)

DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING								
Date		June 2024		Maximum Marks		50		
Course Code		CY245AT		Duration		90 Minutes		
Sem		IV						
Computer Networks (Common to CS, IS, CD, AI & CY)								
Sl. No.		PART-B				M	BT	CO
1	(a)	<div><p>eth1 IP:192.168.4.250 MAC: 09:05:a0:d0:b3:12</p><p>eth1 IP: 192.168.12.101 MAC: 32:30:cd:2e:0b:3c</p><p>IP: 192.168.0.100 MAC: 32:30:cd:0b:1c:2e</p><p>A R1 R2 B</p><p>eth0 IP:192.168.0.250 MAC: 09:05:d0:be:89:02</p><p>eth0 IP: 192.168.4.200 MAC: 32:30:cd:0b:1c:b4</p><p>IP: 192.168.12.45 MAC: 3d:20:01:21:a3:0d</p></div> <p>Answer the following</p> <ol style="list-style-type: none">When frame leaves A towards destination B, what will be the destination MAC of the frame?Mention any one probable protocol at datalink and physical layer of this network if the frame is bit oriented framing protocol.Assume R1 does not know the MAC of R2 but knows only IP address, how does it figure out the MAC of R2?If the frame received by R1 from A has error introduced in the way, how will R1 know the frame is corrupted?Write a neat diagram of OSI layers of B and show where the addresses mentioned fits in.				10	4	2
2	(a)	With a neat FSM explain Stop and Wait Protocol. List the disadvantage of this protocol.				10	3	1
3	(a)	Following data is to be sent using PPP protocol. Show the data sent by the sender and explain the various transition phases in PPP. A B ESC C FLAG ESC FLAG D				10	4	5
4	(a)	Explain the importance of CSMA (Carrier Sense Multiple Access). Illustrate CSMA/CA with a neat flow diagram and its two major problems.				10	3	1

5

(a)



Process-1

PC-1

ROUTER-1

ROUTER-2

ROUTER-4

ROUTER-3

ROUTER-5

ROUTER-6

Process-2

PC-2

Router-1's table initially

Destination	Line
R-1	---
R-2	R-2
R-3	R-3
R-4	R-2
R-5	R-3
R-6	R-3

Router-3's table

Destination	Line
R-1	R-1
R-2	R-4
R-3	---
R-4	R-5
R-5	R-5
R-6	R-5

Router-5's table

Destination	Line
R-1	R-3
R-2	R-4
R-3	R-3
R-4	R-4
R-5	---
R-6	R-6

The initial network and routing table is given.

1. Explain Store and Forward concept in the network
2. If router 2 fails or crashes, show how the routing table of router 1 changes. How is the next best path/hop identified to populate the table?
3. Does all datagrams in the above network take same path? Justify your answer.

6+2+2

4

4

COURSE OUTCOMES:

CO1: Apply the algorithms/techniques of routing and congestion control to solve problems related to Computer Networks.

CO2: Analyse the services provided by various layers of TCP/IP model to build effective solutions

CO3: Design sustainable networking solutions with societal and environmental concerns by engaging in Lifelong learning for emerging technology.

CO4: Exhibit Demonstrate the solutions using various algorithms/protocols available to address networking issues

CO5: Using modern tools by exhibiting team work and effective communication network configuration, protocol usage and performance evaluation in networks.

COs/BTL	CO1	CO2	CO3	CO4	CO5	L1	L2	L3	L4
Marks	20	10		10	10			20	30