1RV23AI035

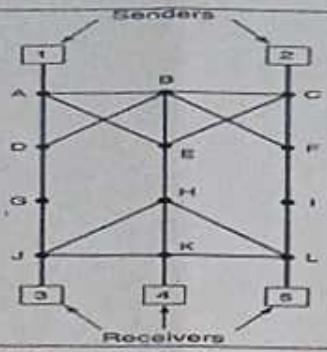
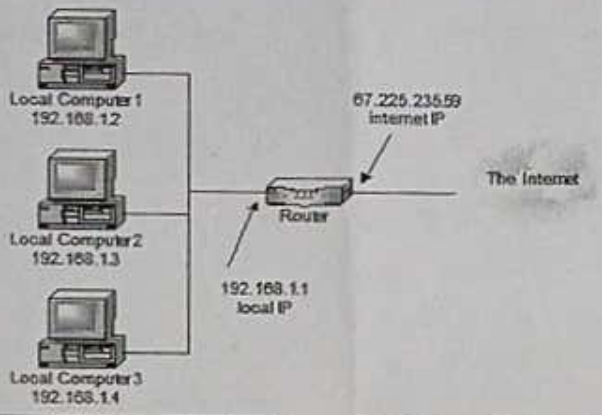
	RV COLLEGE OF ENGINEERING® Department of Computer Science and Engineering IMPROVEMENT CIE : Question Paper		
Course : (Code)	COMPUTER NETWORKS (CY245AT)		Semester : IV
Date : June 2025	Duration : 120 minutes	Staff : CSE/ISE/AI-ML	
Name :	USN :	Section :	CSE/ISE/AI-ML

Answer all questions

Sl.no	Questions	Marks	L1-L6	CO
1.	What is a potential downside of load shedding in network applications?	1	2	2
2.	_____ protocol is used by IntServ to reserve resources along the data path	1	2	3
3.	What are Private IP addresses? Give their ranges for each.	2	2	3
4.	_____ is the nonprofit corporation, which manages the network number to avoid conflicts.	1	2	3
5.	The dotted decimal notation of an IP address expressed in hexadecimal as AC101E38 is _____.	1	3	3
6.	In an IPv4 packet, a value of IHL > 5 implies _____.	1	3	2
7.	If you need to divide a network into at least 5 subnets, with each subnet supporting a minimum of 16 hosts, which Classful subnet mask would be appropriate to use?	2	4	5
8.	Write the abbreviated address for the following IPv6 address: FE80:0000:0000:0000:0202:B3FF:FE1E:8329	1	4	5

Part B

Sl.no	Questions	Marks	L1-L6	CO
1 a.	Differentiate between Leaky Bucket algorithm and Token Bucket algorithm	5	2	2
1 b.	A router has the following (CIDR) entries in its routing table: **Address/mask** / **next hop** 135.46.56.0/22 — interface 0 135.46.60.0/22 — interface 1 192.53.40.0/23 — router 1 default — router 2 For each of the following IP addresses, what does the router do if packet with that address arrives? (i) 135.46.63.10 (ii) 135.46.57.14 (iii) 135.46.52.2 (iv) 192.53.40.7 (v) 192.53.56.7	5	4	5
2 a.	For the given network topology, R3 requests bandwidth 2 MBps from S1, R3 requests bandwidth 1 MBps from S2, R4 requests bandwidth 2 MBps from S1, R5 requests bandwidth 1 MBps from S2. What is the bandwidth required to be reserved at Routers A, B, C, E, H, J, K, L ?	6	4	4

				
b.	Illustrate the working of NAT for the following scenario, when Local Computer wants to communicate with the Internet. 	4	4	4
3 a.	Distinguish between Integrated Services and Differentiated Services. Describe the scheme of Assured Forwarding with the help of relevant diagram.	6	3	3
b.	Identify the class for the following addresses: i. *00000001 00001011 00001011 11101111* ii. *11000001 10000011 00011011 11111111* iii. 14.23.120.8 iv. 252.5.15.111	4	3	4
4 a.	What is Internetworking? How is tunneling used to implement internetworking? Explain.	6	2	2
b.	Demonstrate the different types of fragmentation used in Internetworking.	4	3	3
5 a.	Explain the significance of the following fields in the IPv4 header: (i) TOS; (ii) DF and MF; (iii) Fragment offset; (iv) Protocol.	6	3	3
b.	Briefly discuss about UDP and TCP protocols.	4	2	2

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 life long learning for emerging technology.
CO4	Exhibit network configuration, protocol usage and performance evaluation in networks.
CO5	Demonstrate the solutions using various algorithms/protocols available to address networking issues using modern tools by exhibiting team work and effective communication.

	L1	L2	L3	L4	L5	L6	CO1	CO2	CO3	CO4	CO5
Marks	-	20	22	18	-	-	-	17	21	14	8