

## **RV COLLEGE OF ENGINEERING®**

## **Department of Computer Science and Engineering**

**IMPROVEMENT CIE: SCHEME** 

Course: (Code)

**COMPUTER NETWORKS (CY245AT))** 

Semester: IV

Date: June 2025 **Duration:** 120 minutes Staff: CSE/ISE/AI-ML Section: CSE/ISE/AI-ML Name:

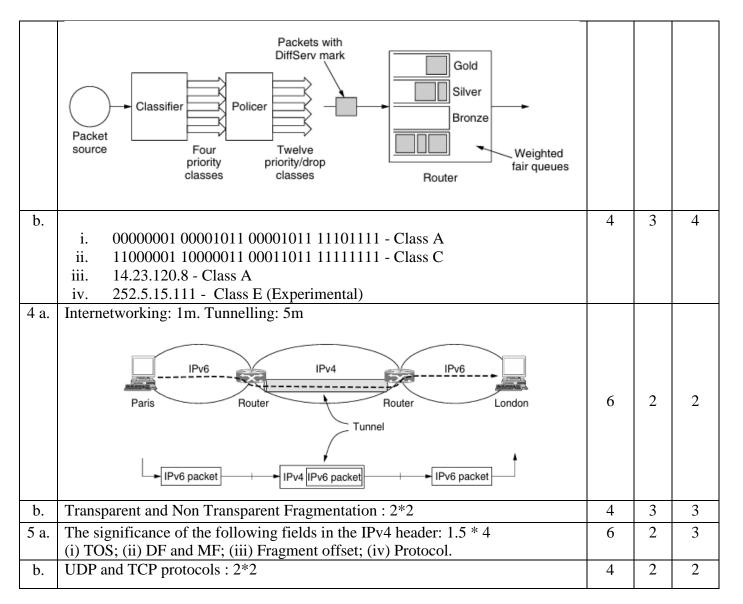
**Answer all questions** 

Sl.no		Mar ks	L1- L6	СО	
	Questions				
1.	Loss of important data or degraded service quality	1	2	2	
2.	RSVP (Resource Reservation Protocol)	1	2	3	
3.	<b>Private IP addresses</b> are IP addresses reserved for use within private networks (like home, office, or enterprise networks).	2	3	3	
	Range:				
	10.0.0.0 – 10.255.255.255				
	172.16.0.0 – 172.31.255.255				
	192.168.0.0 – 192.168.255.255				
4.	IANA/ICANN	1	3	3	
5.	172.16.30.56	1	3	3	
6.	In an IPv4 packet, an Internet Header Length (IHL) value greater than 5 indicates that the IPv4 header contains optional fields beyond the minimum 20 bytes. The IHL field specifies the header length in 32-bit words, and a value of 5 corresponds to the minimum header size of 20 bytes.	1	2	2	
7.	Use Class C with subnet mask 255.255.255.224 (/27) to create at least 5 subnets with at least 16 hosts each.	2	4	5	
8.	FE80::202:B3FF:FE1E:8329	1	4	5	

## Part B

Sl. no	Questions	Mar ks	L1 - L6	СО
1 a.	Differences between leaky bucket algorithm and token bucket algorithm	5	2	1
b.	<ul> <li>(i) 135.46.63.10 The first 22 bits of 135.46.63.10 is network address, is 135.46.60.0. The router forwards the packet to Interface 1.</li> <li>(ii) 135.46.57.14 Given that the first 22 bits of the IP above address, we have 135.45.56.0 which corresponds to the network address of the first row. The packet will be forwarded to Interface 0.</li> <li>(iii) 135.46.52.2</li> </ul>	5	4	5

	In like manner, we got 135.45.52.0 which does not match the first three rows of network addresses. The packet gets forwarded to default gateway which is Router 2.  (iv) 192.53.40.7  We consider the first 23 bits of the above network address, the class 192.53.40.0 is found to match the network address of the third row. The packet gets forwarded to Router 1.  (v) 192.53.56.7  Taking the first 23 bits of the above IP address as network address, we have 192.53.56.0. It does not match the network addresses of the first three rows. The packet will be forwarded to default gateway which is Router 2			
2 a.	A 4 B 0 C 2 E 5 H 5 J 3 K 2 L 1  Total bandwidth reserved at routers A, B, C, E, H, J, K, and L is 24 MB/sec	6	3	4
b.	The basic idea behind NAT is for the ISP to assign each home or business a single IP address (or at most, a small number of them) for Internet traffic. <i>Within</i> the customer network, every computer gets a unique IP address, which is used for routing intramural traffic.  The three reserved ranges are:  10.0.0.0 – 10.255.255.255/8 (16,777,216 hosts)  172.16.0.0 – 172.31.255.255/12 (1,048,576 hosts)  192.168.0.0 – 192.168.255.255/16 (65,536 hosts)	4	3	4
3 a.	Differences between Integrated Services and Differentiated Services – 2m Assured Forwarding with the help of relevant diagram: 4m	6	3	3



Cours	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