CIE: Internal Assessment Details

Internal Assessment Question Paper – 1
Ramaiah Institute of Technology
(Autonomous Institute, Affiliated to VTU)
Department of Computer Science and Engineering

Programme: B.E | **Term:** April 2024 – July 2024 | **Max Marks:** 30
CIE: Test 1 | **Subject:** Data Communication and Networking | **Subject Code:** CS44
Credits: 3:0:0 | **Sem:** IV | **Sec:** A, B, C
Date: 31/05/2024 | **Time:** 2:00PM–3:00PM | **Portions for Test:** (L01-L16)

Instructions to Candidates:

1. **Question 1 is Compulsory.** Answer any one question from 2 and 3.
2. Each Question carries 15M. **Write figures wherever necessary.**
3. Mobiles, smartwatches or any electronic gadgets are strictly banned.

Sl.No	Question	Marks	Bloom's Level	CO Mapping
1	a. Consider five devices arranged in mesh topology and answer the following questions. i)How many cables are required? ii)Draw the topology for 5 nodes. iii)Compare it with star topology.	5M	L3	CO1
	b. Illustrate Recursive and Iterative DNS mapping process.	5M	L2	CO1
	c. Discuss the Go-Back-N Protocol along with the sequence diagram.	5M	L2	CO2
2	a. What are the types of addresses (identifiers) used in each of the following layers and explain each? i. Application layer ii. Network layer iii. Transport Layer iv. Data-link layer.	4M	L2	CO1
	b. Why some applications are better suited for UDP than TCP? Justify.	5M	L3	CO2
	c. Suppose the measured RTT values are 106 ms and 120 ms. • Compute estimated RTT after each of these sample RTT values is obtained using the value of $\alpha = 0.125$ and assuming that the value of estimated RTT was 100 ms just before the first of these two samples was obtained. • Compute DevRTT after each sample is obtained assuming the value of $\beta=0.25$ and	6M	L3	CO2

	assuming the value of DevRTT = 5 ms just before the first of these two samples were obtained. • Compute the TCP time-out interval after each of these samples was obtained.			
3	a. Interpret the meaning of each line in few sentences for below HTTP messages. *GET/somedir/page.html HTTP/1.1* *HOST: www.someschool.edu* *Connection: close* *User_agent: Morzilla/5.0* *Accept_language: fr*	5M	L2	CO1
	b. Explain the flow control mechanism in TCP along with receiver window calculations.	5M	L2	CO2
	c. Sketch the Finite State Machine(FSM) for the TCP Congestion Control Mechanism.	5M	L2	CO2

Course Outcomes meant to be assessed:

CO1: Describe the various application layer protocols used by TCP/IP reference model. (PO-1, 2,3, 4,10, PSO1).

CO2: Differentiate between connection oriented and connection less services of transport layer. (PO-1, 2, 3, 4,10, PSO