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RV COLLEGE OF NGINEERING®
(An Autonomous Institution Affiliated to VTU)
IV Semester B. E. Examinations Oct-2023
Common to CS / IS / AIML
COMPUTER NETWORKS

Time: 03 Hours   *Maximum Marks: 100*

Instructions to candidates:
   1. Answer all questions from Part A. Part A questions should be answered in first three pages of the answer book only.
   2. Answer FIVE full questions from Part B. In Part B question number 2 is compulsory. Answer any one full question from 3 and 4, 5 and 6, 7 and 8, 9 and 10.

PART-A

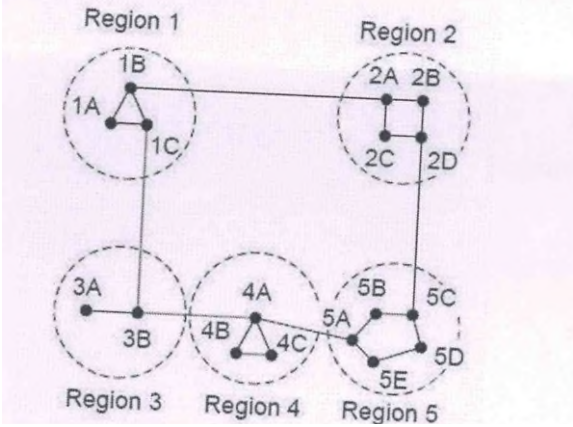| 1	1.1	What do you mean by fragmentation and where it is performed in the layered architecture?	01
	1.2	What is the difference between Point to Point and Multi-Point connection.	01
	1.3	Write the functions of the Network Layer.	01
	1.4	List the components of the Data Communication.	01
	1.5	_____ is the length of the $IPv6$ address.	01
	1.6	Differentiate Interior and Exterior gateway protocol.	01
	1.7	What do you mean by Remote Procedure Call?	01
	1.8	_____ is the port number of the $HTTP$ Protocol.	01
	1.9	Consider two Networks N_1 and N_2, which use the $IPv6$ addressing mode. However, intermediate routers between N_1 and N_2 use the $IPv4$ addressing mode. Illustrate, how communication happens between the networks N_1 and N_2,	02
	1.10	Jack wants to share an important file with John, Identify and justify the application requirements of the same.	02
	1.11	Write the I-frame and S-frame format.	02
	1.12	Identify the properties of a Routing Algorithm.	02
	1.13	Illustrate the functioning of the $DHCP$ protocol.	02
	1.14	Consider the following network with routers A, B, C, D, E and F. Construct the forwarding table for routers A and E. Fig 1.14	02
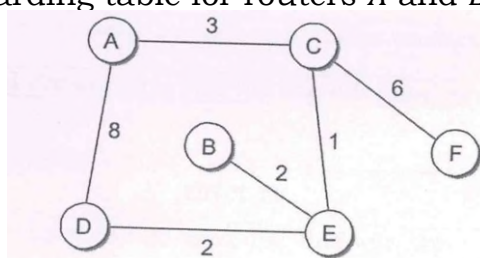
PART-B

2	a	Discuss Stop and Wait Protocol in detail.	08
	b	With an example illustrate various Transmission modes.	08
3	a	Analyze the problem associated with the Distance Vector Routing Protocol and provide the solution for the same.	08

	b	Consider the following hierarchical network and construct the Full routing Table and Hierarchical routing table for the figure 3b.	
		Fig 3b	08
		OR	
4	a	Compare the Virtual Circuits and Datagram Subnets.	08
	b	Consider any sample network and analyze the Multicast routing protocol.	08
5	a	Discuss Explicit Congestion Notification and Hop-by-hop Back Pressure in detail.	08
	b	How, Random Early Detection (*RED*) is useful in handling the congestion occurred in the networks.	08
		OR	
6	a	Summarize the use of Leaky Bucket and Token Bucket Algorithms in Traffic Shaping.	08
	b	Discuss Expedited Forwarding and List the advantages of it.	08
7	a	What makes internetworking is more difficult than operating within a single network.	08
	b	Discuss the IPv4 header Format with a neat diagram.	08
		OR	
8	a	Discuss the Border Gateway Protocol with the Propagation of *BGP* route advertisements.	08
	b	Discuss Internet Control Message Protocol (*ICMP*) along with its message types.	08
9	a	Illustrate the relationship between the network, transport and application layers.	08
	b	Discuss the connection establishment and connection release in *TCP* Protocol.	08
		OR	
10	a	Analyze the state diagram for a simple connection management scheme.	08
	b	Summarize the *TCP* Header Segment.	08