Reg No.:_____ Name:_____

0520MCA104052303

APJ ABDUL KALAM TECHNOLOGICAL UNIVERSITY

Second Semester MCA (2 Year) Degree Regular and Supplementary Examination June 2023

Course Code: 20MCA104

Course Name: ADVANCED COMPUTER NETWORKS

Max. Marks: 60 Duration: 3 Hours

PART A

Answer all questions, each carries3 marks. Marks

1	Explain protocol layering and its advantages.	(3)
2	Describe the working of file transfer protocol with suitable figures.	(3)
3	Compare TCP and UDP at the transport layer	(3)
4	Explain multiplexing and de-multiplexing with diagrams.	(3)
5	Draw the format of the IPv6 packet header, highlighting the significance of each field.	(3)
6	Differentiate between routing and forwarding.	(3)
7	Explain token passing and polling-based multiple access protocol with examples	(3)
8	What is the use of the checksum method? A sender has two data items to send: **1 1 1 0 0 1 1 0 0 1 1 0 0 1 1 0** and **1 1 0 1 0 1 0 1 0 1 0 1 0 1 0 1.** Compute checksum for the data.	(3)
9	Explain the piconet and scatternet architecture of Bluetooth.	(3)
10	What is the use of VPN are the techniques to guarantee privacy for organizations using VPN?	(3)

PART B

Answer any one question from each module. Each question carries 6 marks.

Module I

11	Explain the techniques and mechanisms that guarantee the quality of service of the network to deliver predictable service to an application program.	(6)
	OR	
12	Explain the layered architecture of the TCP/IP reference model.	(6)

Module II

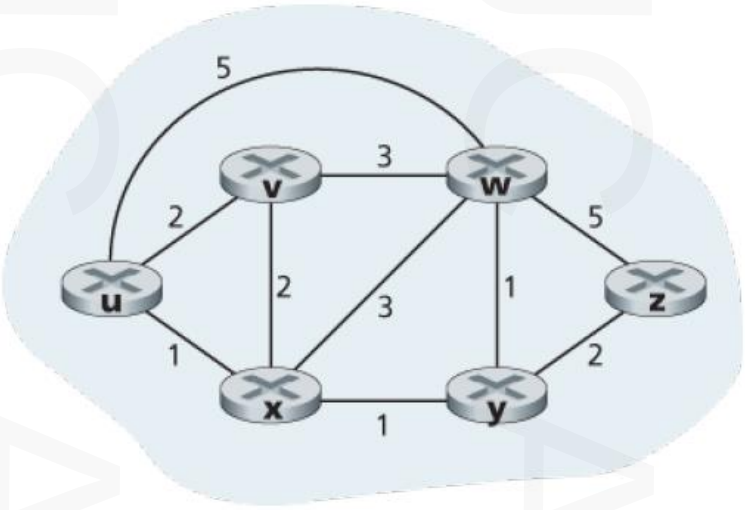
13	How the flow and error control service is provided by the transport layer using Go-Back-N and Selective-Repeat protocols. Depict the working using timing diagrams.	(6)
	OR	
14	Explain TCP segment structure with the frame format.	(6)

Module III

15 How routing is performed in the internet using interdomain routing protocol BGP (6)

OR

16 Explain the working of link state routing. Use Dijkstra's algorithm and show the tabular summary of the algorithm's computation to find the shortest path for node U in the above graph. (6)



Module IV

17 Explain CRC. Generate codeword at sender and perform checking of codeword at receiver. Assuming no error for the dataword 1100 and divisor 1101 using CRC. (6)

OR

18 Elucidate the techniques character-oriented framing and bit-oriented framing in data link control (DLC) to organize the bits that are carried by the physical layer. (6)

Module V

19 With neat diagram explain the architecture of IEEE 802.11 Wireless LAN. (6)

OR

20 a) Elaborate the working of traffic analysis tools. (3)

b) Explain any 3 tools/ commands for troubleshooting used by network administrators. (3)

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