Q. Code:431821

Reg. No. | | | | | | | | | | | | | |

B.E. / B.TECH. DEGREE EXAMINATIONS, MAY 2024

Fourth -Semester

CS18403 – COMPUTER NETWORKS

(Computer Science and Engineering)

(Regulation 2018/2018A)

TIME: 3 HOURS **MAX. MARKS: 100**

COURSE OUTCOMES	STATEMENT	RBT LEVEL
CO 1	Students will be able to understand the concepts of computer networks and Internet.	**2**
CO 2	Students will be able to categorize different application layer level protocols based on user's request.	**4**
CO 3	Students will be able to apply the knowledge of addressing scheme and various routing protocols in data.	**3**
CO 4	Students will be able to examine the flow of information from one node to another node in the network.	**4**
CO 5	Students will be able to distinguish the link, physical layers and error detection-correction of data.	**4**

PART- A (10 x 2 = 20 Marks)

(Answer all Questions)

		CO	RBT LEVEL
1.	Define Delay, Loss and Throughput in a network.	**1**	**1**
2.	If 10 devices are connected with each other in a mesh topology then calculate the number of links required.	**1**	**1**
3.	List the three main division (levels) of the domain name space.	**2**	**4**
4.	Distinguish between HTTP and SMTP.	**2**	**4**
5.	Compare and contrast TCP and UDP.	**3**	**3**
6.	Classify the protocols used in transport layer.	**3**	**2**
7.	Identify the network address in a class A subnet with the IP address of one of the hosts as 25.34.12.56 and mask 255.255.0.0?	**4**	**3**
8.	List out the services offered by Network Layer.	**4**	**4**

9.	Infer the reasons for dividing the data link layer into two sub layers.	**5**	**4**	
10.	Enlist the controlled access protocols.	**5**	**4**	

PART- B (5 x 14 = 70 Marks)

			Marks	CO	RBT LEVEL
11. (a)		Demonstrate with an example how the data passes through the different layers in OSI model.	**(14)**	**1**	**2**
		(OR)			
(b)		Outline the steps involved in building a computer network. Give the detailed description for each step.	**(14)**	**1**	**2**
12. (a)		Compare and Contrast HTTP and FTP. Give their uses, state strengths and weaknesses.	**(14)**	**2**	**4**
		(OR)			
(b)		Examine the role of a DNS on a computer network, including its involvement in the process of a user accessing a web page	**(14)**	**2**	**4**
13. (a)		Explain how reliable and ordered delivery is achieved through TCP in detail.	**(14)**	**3**	**2**
		(OR)			
(b)	**(i)**	Outline the differences between TCP and SCTP.	**(7)**	**3**	**2**
	(ii)	Summarize the services offered by UDP in transport layer.	**(7)**	**3**	**2**
14. (a)	**(i)**	Demonstrate inter and intra domain routing in BGP with suitable diagrams.	**(9)**	**4**	**3**
	(ii)	Illustrate IPv4 packet format and describe how fragmentation is applied in datagram delivery.	**(5)**	**4**	**3**
		(OR)			
(b)		Identify and discuss any two Unicast routing algorithms with neat diagram.	**(14)**	**4**	**3**
15. (a)		List out the error detection and error correction techniques and its need. Describe its types in detail.	**(14)**	**5**	**4**
		(OR)			
(b)		Classify the Random access protocols. Explain the working principle of CSMA, CSMA/CD and CSMA/CA	**(14)**	**5**	**4**

PART- C (1 x 10 = 10 Marks)

(Q.No.16 is compulsory)

			Marks	CO	RBT LEVEL

16.	An organization is granted a block of addresses with the beginning address 14.24.74.0/24. The organization needs to have 3 subblocks of addresses to use in its three subnets: one subblock of 10 addresses, one subblock of 60 addresses, and one subblock of 120 addresses. Design the subblocks.	**(10)**	**4**	**5**

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