CBCS SCHEME

18CS52

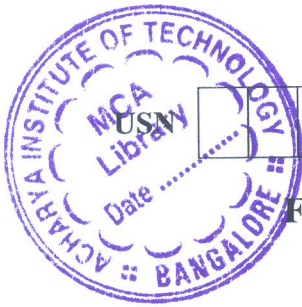## Fifth Semester B.E. Degree Examination, June/July 2024
Computer Networks and Security

Time: 3 hrs.   Max. Marks: 100

Note: Answer any FIVE full questions, choosing ONE full question from each module.

Module-1

1	a.	Differentiate between non-persistent and persistent connections in HTTP.	(05 Marks)
	b.	Explain the conditional GET operation.	(05 Marks)
	c.	Illustrate file distribution time in peer to peer and client server architecture.	(10 Marks)

OR

2	a.	Explain mail transfer from sender to receiver using SMTP protocol.	(10 Marks)
	b.	Explain DNS Records and Messages in detail.	(10 Marks)

Module-2

3	a.	With a neat diagram, explain TCP segment structure.	(07 Marks)
	b.	Explain the causes and costs of congestion.	(08 Marks)
	c.	Elaborate the three way handshake in TCP.	(05 Marks)

OR

4	a.	Explain network assisted congestion control in ATM Available Bit Rate (ABR).	(06 Marks)
	b.	Explain reliable data transfer in a channel with bit errors.	(06 Marks)
	c.	In detail explain the selective repeat protocol for reliable data transfer.	(08 Marks)

Module-3

5	a.	What is routing? With a neat diagram, explain the structure of a router.	(10 Marks)
	b.	Explain link state routing algorithm. Compute the shortest path for the network shown in Fig.Q5(b) using link state algorithm.	

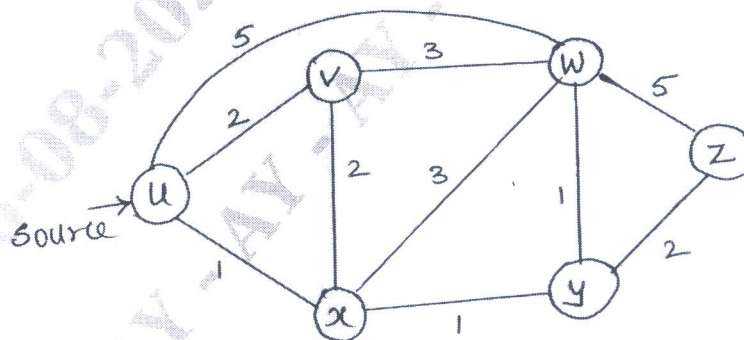Fig.Q5(b)   (10 Marks)

OR

6	a.	Explain IPv6 packet format in detail.	(07 Marks)
	b.	Explain the significance of spanning tree in broadcast routing.	(05 Marks)
	c.	Explain inter-AS routing in the internet with BGP protocol.	(08 Marks)

Module-4

7 a. Explain the threats to network security. (08 Marks)
   b. Explain RSA algorithm. Using RSA encrypt a message m = 9. Assume p = 3, q = 11 and x = 3. Compute y and show encryption and decryption. (08 Marks)
   c. Explain encryption in advanced encryption standard. (04 Marks)

OR

8 a. In the Diffie Hellman key exchange protocol, prove that the two keys K_1 and K_2 are equal. (05 Marks)
   b. With a neat diagram, discuss the steps in DES algorithm. (10 Marks)
   c. Write a note on firewalls. (05 Marks)

Module-5

9 a. Explain multimedia streaming using HTTP. (08 Marks)
   b. What are the properties of video? (04 Marks)
   c. Discuss loss anticipation schemes used by VOIP applications. (08 Marks)

OR

10 a. Briefly discuss how DNS redirects a user request to a CDN server with an example. (08 Marks)
    b. Explain setting up a call to a known IP address in SIP. (08 Marks)
    c. Explain RTP packet header. (04 Marks)

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