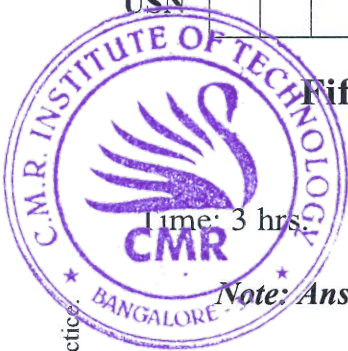


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Fifth Semester B.E. Degree Examination, Jan./Feb. 2023 Computer Networks and Security

Max. Marks: 100

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

Module-1

- 1 a. Explain the use of cookie files in web applications. (06 Marks)
- b. With a neat diagram, explain how SMTP can be used for transmitting mails from sender to receiver. (08 Marks)
- c. Discuss the working of Bit Torrent for file distribution. (06 Marks)

OR

- 2 a. Differentiate between persistent and non persistent connections in HTTP. (05 Marks)
- b. In brief explain the conditional GET operation. (05 Marks)
- c. Describe the DNS records and messages in detail. (10 Marks)

Module-2

- 3 a. In brief describe UDP segment structure and checksum computation. (06 Marks)
- b. With a neat diagram demonstrate the working of GO-BACK-N protocol. (08 Marks)
- c. Explain TCP flow control in detail. (06 Marks)

OR

- 4 a. With the help of a FSM, describe reliable data transfer in a Lossy channel with bit errors (rdt 3.0). (08 Marks)
- b. Explain the various fields of a TCP segment structure. (05 Marks)
- c. What are the approaches to congestion control? Explain in detail with example. (07 Marks)

Module-3

- 5 a. Explain inter autonomous system routing with Border Gateway protocol. (08 Marks)
- b. Explain various Broadcast Routing algorithms. (08 Marks)
- c. Write a note on IGMP protocol. (04 Marks)

OR

- 6 a. Write the link state algorithm and apply it to the following graph. Assume node 'u' as the source node. (10 Marks)

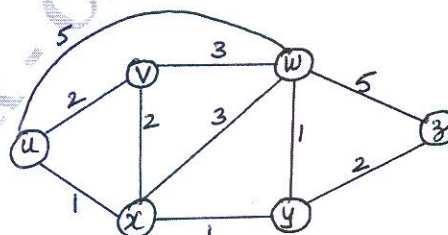


Fig.Q.6(a)

- b. Explain the architecture of a Router. (10 Marks)

Important Note : 1. On completing your answers, compulsorily draw diagonal cross lines on the remaining blank pages.
2. Any revealing of identification, appeal to evaluator and /or equations written eg, 42+8 = 50, will be treated as malpractice.

Module-4

- 7 a. What are the elements of network security? Discuss the threats to network security. (10 Marks)
- b. Explain RSA algorithm. Using RSA encrypt a message $m = 9$. Assume $p = 3$ and $q = 11$. Find the public key and private key, also show encryption and decryption. (10 Marks)

OR

- 8 a. Explain the working of DES algorithm. (08 Marks)
- b. Discuss the secure Hash Algorithm. (06 Marks)
- c. Write a note on firewalls. (06 Marks)

Module-5

- 9 a. Explain the types of multimedia network applications. (06 Marks)
- b. Briefly explain how DNS redirects a user request to a CDN server. (08 Marks)
- c. With a diagram, explain SIP call establishment. (06 Marks)

OR

- 10 a. What are the properties of video and audio? Explain in detail. (07 Marks)
- b. With a neat diagram, explain streaming stored video over HTTP. (07 Marks)
- c. Explain the Forward Error Correction (FEC) technique for loss anticipation in VoIP application. (06 Marks)
