CBCS SCHEME

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18CS52

Fifth Semester B.E. Degree Examination, Jan./Feb. 2023
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. 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)

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)

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