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18CS52

**Fifth Semester B.E. Degree Examination, July/August 2021**  
**Computer Networks and Security**

Time: 3 hrs.

Max. Marks: 100

**Note: Answer any FIVE full questions.**

- 1
  - a. Describe HTTP with persistent and non-persistent connections. (10 Marks)
  - b. Write a note on web caching. (05 Marks)
  - c. Explain SMTP with example. (05 Marks)
- 2
  - a. Define a Socket. Describe the socket programming using TCP. (10 Marks)
  - b. Describe in detail the services provided by DNS and explain the DNS message format. (10 Marks)
- 3
  - a. Illustrate TCP and UDP segment structure with a help of diagram. (10 Marks)
  - b. With an FSM, explain the three phases of congestion control. (10 Marks)
- 4
  - a. Explain the stop and wait protocol with FSM representation rdt2.1. (10 Marks)
  - b. Explain the concept of transport layer multiplexing and De-Multiplexing. (10 Marks)
- 5
  - a. What is routing? Explain the structure of router. (10 Marks)
  - b. Explain IPV4 datagram format with neat diagram. (10 Marks)
- 6
  - a. Explain Dijkstra's algorithm with example. (10 Marks)
  - b. Discuss the IPV6 packet format. (06 Marks)
  - c. List the broadcast routing algorithms. Explain any one of them. (04 Marks)
- 7
  - a. Explain four types of internet infrastructure attacks in Network security. (10 Marks)
  - b. What is secret-key encryption protocols? Explain DES algorithm. (10 Marks)
- 8
  - a. Discuss the secure Hash Algorithm. (05 Marks)
  - b. Explain IP security and IPsec. (05 Marks)
  - c. Explain RSA Algorithm. Using RSA algorithm encrypt a message  $M = 9$ . Assume  $p = 3$  and  $q = 11$ . Find public and private keys and also show the cipher text. (10 Marks)
- 9
  - a. List the categories of streaming stored video. Explain one of them. (10 Marks)
  - b. Bring out the leaky bucket mechanism for traffic policing. (10 Marks)
- 10
  - a. Write a short notes on:
    - i) Netflix video streaming platform (10 Marks)
    - ii) VOIP with skype. (10 Marks)
  - b. Explain the types of multi media network applications. (10 Marks)

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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.