21EC742

USN

Seventh Semester B.E./B.Tech. Degree Examination, Dec.2024/Jan.2025
Network Security

Time: 3 hrs.   Max. Marks: 100

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

Module-1

1 a. Discuss the four principles of security in detail.   **(10 Marks)**
  b. What are the 2 types of security attacks? Explain Passive attacks in detail along with classification.   **(10 Marks)**

OR

2 a. Write short notes on virus, worms and cookies.   **(08 Marks)**
  b. What is packet spoofing? Mention its three possible cases.   **(06 Marks)**
  c. Explain sniffing and phishing attacks.   **(06 Marks)**

Module-2

3 a. Explain the parameters that define the session state and connection state in the secure socket layer.   **(08 Marks)**
  b. Mention the types of security threats faced when using the web.   **(08 Marks)**
  c. With the help of diagram, explain the alert protocol and its operation.   **(04 Marks)**

OR

4 a. With suitable diagram, explain how the Message Authentication Code (MAC) is calculated and the generation of pseudorandom function in transport layer security.   **(10 Marks)**
  b. Explain the connection initiation and closure of HTTPs in detail.   **(10 Marks)**

Module-3

5 a. Explain the transport and tunnel modes in IP security.   **(10 Marks)**
  b. Mention the applications and benefits of IP security.   **(10 Marks)**

OR

6 a. Illustrate the working of basic combinations of security associations.   **(10 Marks)**
  b. Explain the Internet key Exchange process using Diffie-Hellman algorithm.   **(10 Marks)**

Module-4

7 a. Explain the 3 classes of intruders with examples and explain the intruder behavior patterns.   **(10 Marks)**
  b. Explain the types of malicious software in detail.   **(10 Marks)**

OR

8 a. Describe the generations of antivirus software.   **(10 Marks)**
   b. With neat diagram, explain the digital immune system approach of virus protection.
                                                                               (10 Marks)

Module-5

9 a. What are the capabilities and limitations of firewall?   **(10 Marks)**
   b. What are the different types of firewall? With a neat diagram, describe the working of packet filtering firewall.   **(10 Marks)**

OR

10 a. With neat diagram, explain the distributed firewall configuration.   **(08 Marks)**
   b. Discuss the characteristics of Bastion host. Explain the host based and personal firewalls.
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