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Eighth Semester B.E. Degree Examination, Dec.2023/Jan.2024 Network Security

Max. Marks: 100

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

Module-1

- 1 a. Explain the principles of security. (10 Marks)
- b. Define passive and active-security attacks. Discuss the functioning of following attacks with diagrams:
 - i) Masquerade
 - ii) Replay
 - iii) Modification of messages
 - iv) Denial of service. (10 Marks)

OR

- 2 a. Discuss five different ways of launching an application level attack or a network level attack. (10 Marks)
- b. Explain Java sandbox model with relevant block diagram. (10 Marks)

Module-2

- 3 a. Explain web traffic security approaches with regard to relative location of security facilities in the TCP/IP protocol stack. (08 Marks)
- b. Explain Secure Socket Layer (SSL) protocol stack with relevant diagram and the different parameters used in session and connection states. (12 Marks)

OR

- 4 a. Explain SSL Handshake protocol action with relevant flow diagram. (10 Marks)
- b. Interpret the steps involved in SSH transport layer protocol for packet exchanges with signal flow diagram. (10 Marks)

Module-3

- 5 a. Define security association. Explain the parameters defined for security association in an SAD entry. (10 Marks)
- b. Describe transport and tunnel modes used for IPsec ESP services bringing out their scope relevant to IPV4 and IPV6 with relevant diagram. (10 Marks)

OR

- 6 a. Examine the IPsec implementation for secured communication for distributed applications involving the following:
 - i) Organization's LANs at dispersed locations.
 - ii) Private or Public WAN.
 - iii) Individual users who dial into the WAN. (10 Marks)
- b. Explain IKEv2 exchanges with relevant flow diagram. (10 Marks)

Module-4

- 7 a. Explain Intrusion techniques and list the techniques for learning passwords. (10 Marks)
b. Explain distributed intrusion detection architecture along with agent module. (10 Marks)

OR

- 8 a. Discuss computer virus, its components and life cycle. (10 Marks)
b. Explain digital immune system with relevant block diagram. (10 Marks)

Module-5

- 9 a. List the capabilities and limitations of a firewall. (10 Marks)
b. Explain firewall configuration with relevant block diagram. (10 Marks)

OR

- 10 a. Explain firewall implementation in a virtual private network. (10 Marks)
b. Explain distributed firewall configuration. (10 Marks)

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