



CBCS SCHEME

21EC742

Seventh Semester B.E./B.Tech. Degree Examination, Dec.2025/Jan.2026

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. Explain the four principles of security with suitable diagrams. (10 Marks)
- b. Explain the model for Network Security with neat diagram. (10 Marks)

OR

- 2 a. Explain passive and active attacks with suitable diagrams. (10 Marks)
- b. Explain the specific attacks sniffing, spoofing, phishing. (06 Marks)
- c. Write short notes on virus and worms. (04 Marks)

Module-2

- 3 a. Discuss the Secure Socket Layer (SSL) protocol stack and describe the working in detail. (10 Marks)
- b. Discuss the four stage handshake protocol with neat diagram. (10 Marks)

OR

- 4 a. Discuss different alert codes supported by Transport Layer security (TLS). (10 Marks)
- b. With a neat diagram, explain Secure Shell (SSH) protocol stack. (10 Marks)

Module-3

- 5 a. Draw the processing model for outbound packets and processing model for inbound packets and explain each. (10 Marks)
- b. List and explain IPsec documents. (05 Marks)
- c. Explain the various fields of ESP format with suitable diagrams. (05 Marks)

OR

- 6 a. Discuss the purpose of padding and Anti-replay service. (10 Marks)
- b. With neat diagram, explain the scope of ESP encryption in Tunnel mode and Transport mode. (10 Marks)

Module-4

- 7 a. List and explain three classes of intruders. Describe the intruder behaviour patterns. (10 Marks)
- b. With a neat diagram, illustrate the profiles of intruder and authorized users. Also discuss approaches to intrusion detection. (10 Marks)

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OR

- 8 a. Define Virus. Describe the four phases of virus. (05 Marks)
- b. Explain Virus structure. (05 Marks)
- c. Write short notes on : (10 Marks)
 - i) Antivirus approaches
 - ii) Digital Immune System.

Module-5

- 9 a. Explain the various design goals of a firewall. Also give the details about the capabilities and limitations of firewall. (10 Marks)
- b. With neat diagram, describe the working of packet filtering firewall. (10 Marks)

OR

- 10 a. Discuss the characteristics of Bastion Host. (10 Marks)
- b. Explain Host based and personal firewalls. (06 Marks)
- c. Explain the different purpose for which internal firewall can be used. (04 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.

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