CBCS SCHEME

USN

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.

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.

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)

OR

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

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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02-01-2026 09:01:28am AY - AY - AY - AY