

# CBCS SCHEME

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18EC821

## Eighth Semester B.E. Degree Examination, June/July 2024 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 all the principles of security with suitable diagrams. (07 Marks)
- b. Explain Java Sand Box with related diagram which shows detailed steps in the execution of the java program on internet. (07 Marks)
- c. Write short notes on virus and worms. (06 Marks)

OR

- 2 a. Explain passive and active attacks with suitable diagrams. (07 Marks)
- b. List out two types of specific attacks and explain in detail. (07 Marks)
- c. What is cookie? Explain its creation and usage of cookies with relevant diagrams. (06 Marks)

### Module-2

- 3 a. List the various web traffic security approaches and explain with relevant diagrams. (06 Marks)
- b. With suitable diagrams, explain the working of handshake protocol action. (08 Marks)
- c. With suitable diagram, explain SSL architecture with the concepts of connection and session. (06 Marks)

OR

- 4 a. What is transport layer security? Explain calculation of Message Authentication Code (MAC) and Generation of Pseudorandom function with suitable diagram. (10 Marks)
- b. Explain the working of HTTPS with related connection initiation and connection closure. (05 Marks)
- c. With suitable diagram, explain the packet formation of SSH transport layer protocol. (05 Marks)

### Module-3

- 5 a. Explain IP Security overview with suitable diagram and list its applications. (07 Marks)
- b. Explain IPSec documents with suitable diagram and write a short note on security associations. (08 Marks)
- c. Explain how authentication header guards against the replay attack. (05 Marks)

OR

- 6 a. Explain the two ways in which IPSec authentication service can be used with related diagrams. (08 Marks)
- b. Explain the various fields of ESP format with suitable diagrams. (05 Marks)
- c. Explain the scope of ESP encryption and authentication in transport and tunnel mode with suitable frame format. (07 Marks)

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-4**

- 7 a. List and explain three classes of intruders. Explain various intrusion techniques. (10 Marks)  
b. Define intrusion detection with suitable approaches. Explain statistical anomaly detection. (10 Marks)

**OR**

- 8 a. i) Define virus. Explain its life phases. (10 Marks)  
ii) Explain virus structure with suitable example. (10 Marks)  
b. Write short notes on:  
(i) Digital immune system (10 Marks)  
(ii) Antivirus approaches (10 Marks)

**Module-5**

- 9 a. List various types of firewalls. Explain the packet filtering router in detail. (10 Marks)  
b. Explain various design goals of a fire wall. Also give details about the capabilities and limitations of firewall. (10 Marks)

**OR**

- 10 a. Define firewall configuration. Explain in detail the various configurations with suitable diagrams. (10 Marks)  
b. Explain in detail the circuit level gateway with suitable diagrams. (10 Marks)

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