

Instructions: All questions are compulsory. Use of non-programmable scientific calculator is allowed.

- Q.1 (a) Explain the terms: threats, vulnerabilities, harm, and controls in computer security. (07)
 (b) What is cyber security? Discuss the major issues and challenges associated with cyber security (07)
 OR
 (a) Explain the role and objectives of the Internet Society in cyberspace governance. (07)
 (b) Describe the evolution of internet and the infrastructure involved in internet data transfer. (07)
- Q.2 (a) Compare and contrast stateless and stateful firewalls. (07)
 (b) Describe the concept of Network Address Translation (NAT) and its role in cybersecurity. (07)
 OR
 (a) Explain how a firewall protects a network with a suitable diagram. (07)
 (b) Define cyberspace. Explain the architecture of cyberspace with its components. (07)
- Q.3 (a) What is vulnerability scanning tools? Describe the role of OpenVAS and Metasploit in scanning. (07)
 (b) Describe various types of web attacks that target users and websites. (07)
 OR
 (a) Explain the difference between authentication and access control with examples. (07)
 (b) What are the key features and functionalities of Snort as an Intrusion Detection System (IDS)? (07)
- Q.4 (a) Explain how a firewall protects a network with a suitable diagram. (07)
 (b) Discuss different tools and techniques used in network vulnerability scanning. (07)
 OR
 (a) Discuss the working and configuration basics of Linux and Windows firewalls. (07)
 (b) Discuss the key differences between the internet and the World Wide Web. (07)
- Q.5 Attempt any SEVEN out of TWELVE: (14)
 (1) List any two challenges of cyber security.
 (2) Name two email-based cyber-attacks.
 (3) What is the use of a traffic probe in vulnerability assessment?
 (4) Define the term "Internet Infrastructure".
 (5) Mention any two key goals of internet governance.
 (6) What is cyberspace?
 (7) What is meant by vulnerability in system security?
 (8) Mention any two examples of browser-based attacks.
 (9) Define banner/version check in vulnerability scanning.
 (10) Write any two differences between internet and web.
 (11) What is the function of Netcat in scanning?
 (12) What do you understand by "communication and web technology"?