

## Int. M.Sc. (AIML) Sem.-9 Examination

CC-501

Cyber Security

November-2025

Time : 2-30 Hours]

[Max. Marks : 70

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

- Q.1 (a) What are vulnerability scanning tools? Describe the role of OpenVAS and Metasploit inscanning. (07)  
 (b) Describe various types of web attacks that target users and websites. (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.2 (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) 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) 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 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) 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 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.5 Attempt any SEVEN out of TWELVE: (14)
- (1) What is cyberspace?
  - (2) Write any two differences between internet and web.
  - (3) What do you understand by "communication and web technology"?
  - (4) Define the term "Internet Infrastructure".
  - (5) Mention any two key goals of internet governance.
  - (6) List any two challenges of cyber security.
  - (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) Name two email-based cyber-attacks.
  - (11) What is the function of Netcat in scanning?
  - (12) What is the use of a traffic probe in vulnerability assessment?

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