2011N768   Candidate's Seat No :_____

IM.Sc AIML & DS Sem.-9 Examination
CC 501
Cyber Security
Time : 2-30 Hours]   November-2024   [Max. Marks : 70

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

Q.1 **(a)** Define cyber security and Discuss the issues and challenges of cyber security. (07)

(b) Explain the concept of data transfer over the internet and the associated security risks. (07)

OR

(a) Explain the need for international cooperation in regulating cyberspace. (07)

(b) Discuss the challenges of regulating cyberspace and ensuring cyber security (07)

Q.2 **(a)** Discuss types of threats & harms that can occur due to vulnerabilities (07)

(b) Describe the controls that can be implemented to mitigate vulnerabilities, including authentication, access control, and cryptography (07)

OR

(a) Describe the process of open port/service identification and banner/version check in vulnerability scanning. (07)

(b) Discuss the importance of cryptography in preventing web attacks (07)

Q.3 **(a)** Explain the concept of firewalls and packet filters (07)

(b) Discuss the basics of Virtual Private Networks (VPNs) (07)

OR

(a) Discuss the role of Snort as an Intrusion Detection System (IDS) (07)

(b) Discuss the limitations and potential vulnerabilities of firewalls (07)

Q.4 **(a)** Explain the security implications of mobile devices for organizations (07)

(b) Compare the security threats on mobile devices versus traditional computers (07)

OR

(a) Explain the types of attacks, such as SIMjacking, SMS spoofing, and phishing (07)

(b) Explain the concept of access control & its importance in preventing unauthorized access to systems and data (07)

(P.T.O)

Q.5   Attempt any SEVEN out of **TWELVE:**   **(14)**

    (1)   What is a firewall, and what role does it play in network defense?

    (2)   What is Network Address Translation (NAT), and why is it used?

    (3)   Briefly describe the use of a Linux firewall.

    (4)   How does a Windows firewall help secure a network?

    (5)   What are examples of cyber crimes that specifically target computers and mobile devices?

    (6)   Describe the impact of financial fraud as a type of cyber crime.

    (7)   Briefly explain the concept of malware and ransomware attacks

    (8)   What is a "zero-day" attack in the context of cybersecurity?

    (9)   What is the role of the Internet Society?

   (10)   How does Metasploit assist in vulnerability scanning?

   (11)   Why is the governance of the internet essential for cybersecurity?

   (12)   Explain how access control helps protect against security threats

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