National Forensic Sciences University
School of Cyber Security and Digital Forensics

Course Name: M.Tech. Cyber Security (Batch: 2024-26)
Semester - I **Exam:** TA - I (Sep – 2024)
Subject Code: CTMTAIDS SI P2 **Time: 2:30-3:15pm**
Subject Name: (Network Security and Forensics) **Date: 09/09/2024**

Q1. Multiple Choice Question. (Attempt All) **[05 Marks]**

1. Which networking device operates primarily at the Data Link layer but also has some functionalities at the Network layer in order to optimize packet delivery?

A) Hub
B) Switch
C) Bridge
D) Router

2. Which of the following accurately describes the difference between a vulnerability and an exploit?

A) A vulnerability is an active attack, while an exploit is a weakness in a system.
B) A vulnerability is a weakness in a system, while an exploit is the method used to take advantage of that weakness.
C) A vulnerability is the unauthorized use of a system, while an exploit is the recovery of data.
D) A vulnerability is a type of exploit that affects physical security, while an exploit only affects software.

3 What is a key difference between IDS (Intrusion Detection System) and IPS (Intrusion Prevention System)?

A) IDS blocks malicious traffic, while IPS only monitors it.
B) IDS is installed on hosts, while IPS is a network-based device.
C) IDS detects and alerts on potential threats, while IPS takes proactive measures to block them.
D) IDS operates at the application layer, while IPS operates at the network layer.

4. In TCP/IP, which protocol is used to resolve IP addresses to MAC addresses?

A) DNS
B) ARP
C) DHCP
D) ICMP

5. What is the primary function of a router in a network?

A) Amplify signals across the network
B) Connect different networks and route packets between them
C) Filter traffic based on IP addresses
D) Maintain a list of MAC addresses

Q2. Describe the function of a DNS server in a network. **[3 Marks]**

Q3. Describe the functioning of a DHCP server and explain how an attacker might exploit DHCP vulnerabilities to launch a network attack **[5 Marks]**

Q4. Define different firewalls. **[5 Marks]**

Q 5. Discuss OSI Security architecture **[7 Marks]**