



Faculty of Information Technology
MSC in Information Systems Security
End of Semester Examination
MST 8104 Software Laboratory Experience II

DATE: 24th January 2024

Time: 1 Hour

Instructions

- This examination consists of **FIVE** questions.
- Maximal points for the examination is **50**.

1) Define the following terms and shortly describe their utilization in computer networks (9 points)

- 2) Describe how Pretty Good Privacy (PGP) secures e-mail messages. What type of cryptography it uses and against what threats it protects messages? Explain what keys and algorithms are implemented by PGP. (9 points)**

3) Fill the following table with addresses for packets being sent over IPv4 and IPv6 network. Choose your own addresses; however, these addresses should be in the right format and acceptable for Internet communication. (8 points)

For IPv4 network (4 points)

Address	Unicast	Broadcast	Multicast
Src MAC			
Dst MAC			
Src IPv4			
Dst IPv4			

For IPv6 network (4 points)

Address	Unicast	Broadcast	Multicast
Src MAC			
Dst MAC			
Src IPv6			
Dst IPv6			

- 4) Compare SNMP and NetFlow monitoring systems. (12 points)**
- a) Explain similarities and differences of both monitoring systems.**
 - b) Describe the format and structure of information retrieved by both systems.**
 - c) Give an example of monitoring data obtained by SNMP and by Netflow.**
 - d) Give an example of at least three information that can be provided by SNMP but cannot be obtained by Netflow.**
 - e) Give an example of at least three information that can be provided by Netflow but cannot be obtained by SNMP.**

- 5) Define DNS resolution and describe how it proceeds? Explain the difference between the iterative and recursive query. Demonstrate the resolution on domain name www.strathmore.edu in DNS system. Describe what requests are sent to what name servers and what kind of responses are returned. Explain how a DNS resolver knows to which DNS server it should forward the request? (12 points)**