



SCHOOL OF COMPUTING AND ENGINEERING SCIENCES
MSC IN INFORMATION SYSTEMS SECURITY
END OF SEMESTER EXAMINATION
MST 8104 SOFTWARE LABORATORY EXPERIENCE II

DATE: 19th May 2023

Time: 2 Hours

Instructions

- This examination consists of **FIVE** questions.
 - Maximal points for the examination is **50**.
1. Explain the following terms from TCP/IP networking. Give an example how this technology is applied in networking.
(9 points)

Flow

Socket

Go-back-N
 2. Define the cryptographic hash. How the hash is computed and what are its properties? Explain how the cryptographic hash is used to secure network transmission. What crypto hash algorithms do you know? Discuss advantages and limitations for real-world deployment. Give an example of concrete applications where the crypto hash is applied.
(10 points)
 3. Define DNS resolution and explain how it proceeds? Compare iterative and recursive resolution. Explain how a DNS resolver learns to which DNS server it should forward the request?
(10 points)
 4. Explain how concurrent TCP server is implemented using BSD socket library. Depict a sequence of socket functions that are used. Explain how these functions work.
(9 points)
 5. Describe an architecture of SNMP system. Explain what are basic elements that are subjects of SNMP monitoring, how they are defined and addressed. Give an example of at least three of these elements. Describe communication model of SNMP and list at least three SNMP commands. Discuss security of SNMP transmission.
(12 points)