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THE OPEN UNIVERSITY OF SRILANKA
DEPARTMENT OF COMPUTER SCIENCE
B.SC. (HONS) IN IT DEGREE PROGRAMME
FINAL EXAMINATION – 2024/2025
COU6309 – INFORMATION SECURITY
DURATION: TWO HOURS ONLY (02 HOURS)

DATE: 22.06.2025

TIME: 1.30 pm – 3.30 pm

Answer **FOUR (04) Questions ONLY**. All questions carry equal marks. (25 Marks)

Q1.

- i. Identify and explain the elements of information security.
- ii. What is Network Security? Briefly describe.
- iii. Briefly describe the following terms.
 - a) Least Privilege and Isolation
 - b) Open Design
 - c) Defense in Depth
- iv. Briefly describe how to prevent network security threats.

Q2.

- i. State four (4) information security laws and standards in network security.
- ii. Briefly describe how traffic analysis becomes a threat.
- iii. What is network monitoring? Briefly describe.
- iv. Briefly discuss about role of firewalls in network security.

Q3.

- i. State five (5) key layers in defense in depth.
- ii. Explain the differences between Symmetric key cryptography and Asymmetric key cryptography.
- iii. Describe the following terms.
 - a. Threats
 - b. Vulnerabilities
- iv. Briefly describe about benefits of VPNs in network security.

Q4.

- i. State three (3) types of Denial-of- service attacks.
- ii. What is incident response planning? Briefly describe why it is important.
- iii. What are the components of incident response lifecycle? Briefly describe.
- iv. State three (3) common web application vulnerabilities. Briefly describe them.

Q5.

- i. Briefly discuss about the Intrusion Detection Systems. (IDS)
- ii. State four (4) risk management phases.
- iii. Briefly discuss about the message integrity attacks.
- iv. What is information security risk management? Briefly describe.

Q6.

- i. What is a trust boundary? Why are trust boundaries important?
- ii. Describe the following terms.
 - a) Digital Signature
 - b) Digital Certificates
- iii. What is sniffing and traffic redirection? Briefly describe.
- iv. List and briefly discuss about four (4) emerging trends in network security.

-End of Examination Paper-