Assignment 2: 10 marks each question

1. Critically evaluate the security challenges inherent in designing and implementing robust Network Operating Systems.
2. Discuss the importance of kernel-level security mechanisms, access control models, and secure protocol implementations in mitigating network vulnerabilities.
3. Analyze the impact of emerging threats, such as zero-day exploits and advanced persistent threats (APTs), on the security of NOS-managed networks.
4. Examine the role of Network Operating Systems in facilitating network virtualization and Software-Defined Networking (SDN).
5. Discuss how NOS platforms are being adapted to manage virtualized network resources and control the data plane in SDN environments.
6. Analyze the security implications of deploying virtualized NOS and SDN-based networks.
7. Evaluate the importance of automation, orchestration, and monitoring tools in maintaining the stability and performance of complex network environments.
8. Analyze the role of NOS in supporting cloud computing, edge computing, and other distributed computing paradigms.
9. Discuss the potential impact of emerging technologies, such as artificial intelligence (AI), machine learning (ML), and quantum computing, on NOS design and functionality.
10. Analyze the evolving role of NOS in supporting the Internet of Things (IoT), 5G networks, and other next-generation network applications.