CPS 404 – Principles of Network Security: Assignment Questions

1. Cyber Risk Assessment Simulation

Scenario: You have been appointed as the cybersecurity officer for a university.

Task: Perform a comprehensive cyber risk assessment of the university's digital infrastructure. Your assessment should:

- Identify critical information assets.

- Analyze potential threats and vulnerabilities.

- Recommend appropriate risk mitigation strategies.

Deliverable: Prepare a detailed report that summarizes your findings and recommendations in a format that can be easily understood by non-technical stakeholders.

2. Firewall Configuration Exercise

Objective: Deploy and configure a basic firewall using a selected firewall solution (e.g., Guarddog, pfSense, or similar).

Instructions:

- Set up the chosen firewall software in a test environment.

- Configure security rules and policies as required.

- Document each step of the configuration process, including screenshots where applicable.

- Summarize the results and effectiveness of your firewall setup.

3. Virtual Private Network (VPN) Configuration Task

Objective: Establish and test a secure Virtual Private Network (VPN) connection using **OpenVPN**.

Instructions:

- Install and configure OpenVPN on a suitable platform.

- Establish a secure VPN connection.

- Verify and validate the integrity and confidentiality of the connection.

- Perform basic security tests to confirm data encryption and protection.

- Document the entire setup, testing process, and your analysis of the results.