1. Network Security

**a. Consider the security of the above system, discuss three potential security issues and provide countermeasures. For each of the issues, specify the related security service(s), attack(s) and mechanism(s). The demonstrated issues must not relate to the same security service(s). (3 marks) b. Consider that a bank**

1. For the employee is travelling for business, it may be prone to Rogue Access Point attacks in which the attacker may fool the user into linking to a rogue access point and then using that transmitted information to make a real login as that user. The attacker can run various types of vulnerability scanners in which will uncover weaknesses of the device the employee is using.

To prevent this attack, the bank organisation can install wireless intrusion prevention systems (WIPS) and a wireless intrusion detection system (WIDS) to monitor the radio spectrum for unauthorised rogue access points.

Another simple suggestion may be that the bank organisation can provide their own network for the employee to use during their business trip. This will not require for the employee to be sceptical of any rogue access point attackers as they are on a private network.

1. Security issue 2
2. Security issue 3

**b. Consider that a bank employee requests to modify a bank customer’s daily cash transfer limit. Briefly describe the essential security-related step(s) that demonstrate the security checks for the operation. For each step, specify the aimed security service(s). (3 marks)**

Description of each step

**c. An employee accesses the internal system with proper authentication and authorisation. Consider Kerberos, SAML, and OAuth, which one is better for internal system authentication and authorisation? Justify your answer. (2 marks)**

which authentication and authorisation is better for this system

**d. To provide secure connection services for the travelling employees, which of IPSec, SSL/TLS, and SSH, would be a better option? Justify your answer. (2 marks)**

which would be a better option. justify

1. Programming Task