ELIZADE UNIVERSITY, ILARA MOKIN
FACULTY OF BASIC AND APPLIED SCIENCE
DEPARTMENT OF MATHEMATICS AND COMPUTER SCIENCE

SECOND SEMESTER EXAMINATION 2020/2021 SESSION

COURSE TITLE: Security in Enterprise Networks
COURSE CODE: CYB 204

INSTRUCTIONS: Answer Any Four (4) Questions Time Allowed: 2 Hours

1. (a) (i) Explain in details the cardinal objectives of Information Security Management
   (ii) What are 4 types of information assets owned by an enterprise
   (b) Explain why IT departments should stay at the cutting edge of security technology
   (c) IT Security starts at the constantly shifting enterprise perimeter. Explain what is Enterprise Perimeter and any four (4) things need to be considered when securing the perimeter

2. (a) (i) What is a DMZ Network?
   (ii) State and explain three (3) benefits of using a DMZ
   (b) Explain the ISO 27001's Plan-Do-Check-Act (PCDA) model for continuous improvement in Enterprises' Information Security Management processes
   (c) (i) What do you understand by Cryptology?
   (ii) Mention four (4) Cryptographic primitives and relate them to the security service(s) they provide.

3. (a) (i) Briefly describe cryptography write respect to the various components in the cryptographic process
   (ii) Make a broad classification of cryptography and types of cryptographic algorithms.
   (b) (i) With a simple example, explain what is meant by Caesar Cipher
   (ii) Why is Polyalphabetic cipher more secure than a monoalphabetic cipher?
   (c) (i) What is Transposition Technique in Cryptography?
   (ii) Given the message: MEET ME TOMORROW, use the columnar Transposition Technique to encrypt the Plain Text into a ciphertext

4. (a) (i) Explain adequately the two popular Modern Symmetric Key Encryption schemes
   (ii) There is a vast number of block ciphers schemes that are in use. State and explain any four (4) of them
   (b) With the aid of a detailed diagram describe the Feistel Block Cipher model
   (c) (i) What is one advantage of the Feistel design
   (ii) Mention any four (4) most important properties of public key encryption scheme

5. (a) (i) What are trust models in the world of information security?
   (ii) trust models are employed by various cryptographic schemes. Explain 3 trust models you know.
   (b) Attacks are typically categorized based on the action performed by the attacker. State and explain 2 categories of attack.
   (c) Given the amount of normal activity constantly taking place on digital networks, it can be very difficult to pinpoint anomalies. State and explain any four (4) network attack techniques