



## HIGHER EDUCATION PROGRAMMES

Academic Year 2024:	July - December
Formative Assessment 1:	Systems Development 2B (HSYD202-1)
NQF Level, Credits:	6, 20
Weighting:	40%
Assessment Type:	Essay Questions
Educator:	O. Dyantyi
Examiner:	T. Samusodza
Due Date:	13 September 2024
Total:	100 Marks

### Instructions:

- This paper consists of four **(4)** questions.
- It is based on **Lessons 1- 4** of your textbook.
- **All questions are compulsory.**
- This paper consists of three (3) printed pages.
- A **Copyleaks Report** will be issued via ColCampus once the assignment is submitted. Please ensure that you follow the correct steps when uploading your assignment, to ensure that the Copyleaks Report is correctly issued. If the incorrect document is uploaded, or if no Copyleaks Report is issued, a mark of zero (0) will be awarded. If the Copyleaks Report indicates that a 30% similarity/plagiarism score has been exceeded, 25% of the assessment total will be deducted from the final grade.

**Question 1****[25 marks]**

1.1. You are tasked with implementing a robust information security program for a new business. Examine the key principles and building blocks you would consider starting from the ground up.

(15 marks)

2.1. You are tasked with enhancing the information security measures for a rapidly growing e-commerce company. Discuss the specific categories of security controls, emphasising their unique roles in safeguarding the company's sensitive information and cybersecurity.

In your answer, provide insights into how these controls contribute to the organisation's overall security posture, considering both organisation's overall security posture, preventive measures to proactively mitigate risks and corrective measures to address potential security incidents. Use practical examples relevant to the e-commerce industry to illustrate the application of these security controls in a real-world context.

(10 Marks)

**Question 2****[25 marks]**

2.1. Duzman Private Limited, an e-commerce company, has experienced a data breach, compromising thousands of customer credit card details. Critique at least five different motivations that could have led the threat actors to initiate this attack.

(15 marks)

2.2. OpenMind, a technology consulting firm, has recently experienced an increase in suspicious emails and phone calls targeting its employees. These attempts aim to obtain sensitive information or compromise network security. As part of your role, you must explain social engineering techniques and advise employees on recognising and responding to such threats effectively.

Explain the concept of social engineering and outline strategies that DiveTech employees can employ to mitigate the risks associated with social engineering attacks.

(10 marks)

**Question 3****[24 marks]**

3.1. Appraise the concept of symmetric encryption and hashing then compare their roles in ensuring data security.

(12 marks)

3.2. As a security professional responsible for managing a PKI infrastructure, you must ensure digital certificates' integrity and security. Classify the importance of certificate revocation in a PKI infrastructure.

(12 marks)

**Question 4**

**[26 marks]**

4.1. Assess the importance of multifactor authentication (MFA) in enhancing account security by providing examples of different authentication factors and their strengths and weaknesses.

(14 marks)

4.2. Explain the concept of least privilege in the context of access control and how it contributes to enhancing security in an organisation's network environment.

(12 marks)

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