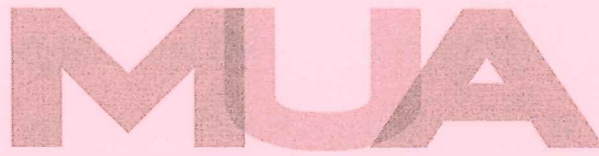


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**DIPLOMA UNIVERSITY EXAMINATIONS**

**SCHOOL OF MANAGEMENT AND LEADERSHIP**

**DIPLOMA IN INFORMATION COMMUNICATION**

**TECHNOLOGY**

**DBT 101: INTRODUCTION TO SYSTEM ANALYSIS AND DESIGN**

**DATE: 4<sup>TH</sup> DECEMBER 2024**

**DURATION: 2 HOURS**

**MAXIMUM MARKS: 70**

**INSTRUCTIONS:**

1. Write your registration number on the answer booklet.
2. **DO NOT** write on this question paper.
3. This paper contains **SIX (6)** questions.
4. Question **ONE** is compulsory.
5. Answer any other **FOUR** questions.
6. Question **ONE** carries **30 MARKS** and the rest carry **10 MARKS** each.
7. Write all your answers in the Examination answer booklet provided.

**QUESTION ONE**

Read the Case Study below carefully and answer the questions that follow:

Label Books is a small independent bookstore that has been operating for several years. They have a physical store where they sell books, but they also want to expand their business by creating an online presence. They have approached your team to design a system that will allow them to manage their online bookstore effectively. **System Requirements:** User Registration: Customers should be able to create accounts with their personal information. Product Catalog: The system should display a catalog of books available for purchase, including titles, authors, genres, and prices. Search Functionality: Users should be able to search for books based on keywords, authors, or genres. Shopping Cart: Customers should be able to add books to their shopping cart and proceed to checkout. Checkout and Payment: The system should support various payment methods, such as credit/debit cards and PayPal. Order History: Registered users should have access to their order history. Admin Panel: Admins should be able to manage the product catalog, view orders, and manage user accounts.

**Required:**

- a) Define system analysis, and why is it important in this project? (2 Marks)
- b) Discuss how you would gather requirements from Label Books for this online bookstore management system? (3 Marks)
- c) Describe the high-level system design for the user registration feature. (4 Marks)
- d) List the security considerations should be taken into account for online payments (4 Marks)
- e) Name the role of the admin panel in this system, and how should it be designed (4 Marks)
- f) Mention key challenges you anticipate during system implementation and deployment (5 Marks)
- g) Demonstrate how the system can ensure data integrity and consistency in the order history feature (4 Marks)
- h) Describe the architecture for the shopping cart feature. (4 Marks)

**QUESTION TWO**

- a) Define system prototype and explain its use (3 marks)
- b) Explain two types of system maintenance (4 Marks)
- c) Formulate how a code generator works (3 marks)

**QUESTION THREE**

Even efficient and elegant systems have to be subjected to post implementation audit

- a) Discuss the purpose of such audit (5 Marks)
- b) Explain the meaning of system maintenance under the goals of system maintenance (5 Marks)

**QUESTION FOUR**

- a) Discuss the purpose of user interface in a system (3 Marks)
- b) Define transaction processing System? Describe its features? (7 Marks)

**QUESTION FIVE**

- a) Define the term Object oriented programming and state three object oriented programming Languages (5 Marks)
- b) Interpret logical data modelling (3 Marks)
- c) Expound the term inheritance as used in object-oriented programming (2 Marks)

**QUESTION SIX**

- a) Preliminary investigation in system development is very important. Briefly explain the purpose of such preliminary investigation (5 Marks)
- b) Mention the major functions of a system (5 Marks)

