

FINAL EXAMINATION

Semester	:	JANUARY 2026 SEMESTER
Programme Name	:	DIPLOMA IN COMPUTER SCIENCE DIPLOMA IN E-BUSINESS TECHNOLOGY MICRO-AWARD IN DIPLOMA IN COMPUTER SCIENCE
Course Code & Name	:	DCS2213 DEB2233 SYSTEM ANALYSIS AND DESIGN DCS2213 MICROCREDENTIAL IN SYSTEMS ANALYSIS AND DESIGN
Duration	:	3 HOURS

INSTRUCTIONS TO CANDIDATES:

1. Please read the instructions given in the question paper **CAREFULLY**.
2. The question paper consists of **FOUR (4)** questions.
3. Answer **ALL** questions in the question paper.
4. Answers to the questions are to be written into the examination booklet.
5. Electronic dictionaries, lecture notes, files or any unauthorised materials except writing equipment are strictly prohibited.

This question paper must be submitted along with all used and/or unused rough papers and/ or graph papers (if any). Candidates are **NOT ALLOWED** to take any examination paper(s) used or unused out of the examination hall.

WARNING:

The Examination Board of Peninsula College Georgetown regards cheating as a very serious offence and will not hesitate to mete out the appropriate punitive actions according to the severity of the offence committed, and in the accordance with the clauses stipulated in the Students' Handbook, up to and including expulsion from Peninsula College Georgetown.

(This booklet contains 3 printed pages including this page)

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Answer **ALL** questions on the separate sheet provided.

[100 marks]

1. a) Describe the **FOUR (4)** phases of the Systems Development Life Cycle (SDLC). For each phase, define its primary purpose and state **ONE (1)** key deliverable that is produced. (12 marks)

- b) Identify and explain **THREE (3)** key risks this project faces if the analyst ignores the ethical issue and proceeds with the sponsor's request. If the analyst proceeds with the sponsor's request without addressing the ethical issue, the project faces several risks: (6 marks)

- c) List **SEVEN (7)** step approach for the analyst to resolve the SDLC project phases implementation conflict described in any business scenario. Focus on how the analyst can address the customer request while maintaining project integrity and ensuring stakeholder alignment. (7 marks)
- Total: [25 marks]

2. a) Explain the Waterfall Development methodology. (2 marks)

- b) Identify **TWO (2)** key advantages and two key disadvantages. (8 marks)

- c) Explain the Agile (Scrum) methodology. (2 marks)

- d) Identify **TWO (2)** key advantages and two key disadvantages. (8 marks)

- e) Describe the **FIVE (5)** main criteria to be considered for project selection and management in SDLC. (5 marks)
- Total: [25 marks]

3. A regional hospital chain is planning to develop a new Patient Appointment and Records System to replace several outdated, disconnected systems. The goal is to streamline patient check-in, provide doctors with instant access to medical history, and allow patients to book appointments online. As a systems analyst, you are tasked with leading the requirements determination phase.
 - a) Explain **THREE (3)** distinct categories of requirements that must be defined for this system. For each category, provide a specific example relevant to the hospital scenario and explain why that example fits the category. (9 marks)

- b) You are a systems analyst working on a new Inventory Management System for a retail company. To gather requirements effectively, you need to select appropriate elicitation techniques based on the situation.

Describe **FIVE (5)** requirement elicitation techniques. (10 marks)

- c) Modern Computer-Aided Software Engineering (CASE) tools have evolved from traditional software to cloud-based, collaborative platforms that support the entire system development lifecycle.

Identify **THREE (3)** modern CASE tools with its key features. (6 marks)

Total: [25 marks]

4. You are a systems analyst tasked with designing a new Mobile Banking Application for a regional bank. The bank wants a secure, user-friendly system that allows customers to check balances, transfer funds, pay bills, and view transaction history. You are currently in the design phase of the System Development Life Cycle (SDLC).

- a) Explain **SIX (6)** activities in the design phase and provide a brief explanation of each. (12 marks)

- b) You are leading the design team for a new E-Commerce Platform that will support high traffic volumes, particularly during sales events like "Black Friday." The platform needs to be scalable, maintainable, and provide an excellent user experience across desktop and mobile devices.

Explain **FOUR (4)** components that should be included in a system specification outline for this e-commerce platform. (8 marks)

- c) In the design phase of the SDLC, defining the system architecture is crucial. The architecture describes the major components of the system and how they interact.

List and briefly **FIVE (5)** core architecture components commonly found in a client-server system design. (5 marks)

Total: [25 marks]

- END OF QUESTIONS -