



UNIVERSITY EXAMINATIONS: 2025/2026
EXAMINATION FOR THE DIPLOMA IN INFORMATION TECHNOLOGY
DICT0212
SOFTWARE ENGINEERING
END TERM EXAMINATION

DATE: MONDAY 8TH DECEMBER, 2025 DURATION: 2 HOURS
TIME: 11:00AM-1:00PM

INSTRUCTIONS: Question One is Compulsory, Choose Three Other Questions

SECTION A (COMPULSORY)

QUESTION ONE (15 MARKS) COMPULSORY

- a. Define Software Engineering. [1 Marks]
- b. Explain why software engineering is an industry requirement. [2 Marks]
- c. Explain the importance of user involvement in system development. [2 Marks]
- d. A developer wants to improve response time in an application. Which type of requirement is being addressed? [2 Marks]
- e. Illustrate how Excel software can be used to assist in software engineering? [2 Marks]
- f. Examine the relationship between software design and software testing. [2 Marks]
- g. Identify one cause of software failure in ICT projects. [1 Mark]
- h. Design a simple SDLC plan for developing a school management system. [2 Marks]
- i. Evaluate the impact of poor testing on business reputation. [1 Mark]

SECTION B: (ANSWER ANY THREE (3) QUESTIONS IN THIS SECTION)

QUESTION TWO (15 marks)

- a. Define a software development model. [1 Mark]
- b. Explain why the Waterfall Model is considered rigid. [2 Marks]
- c. Describe how the Incremental Model differs from the Waterfall Model. [2 Marks]
- d. Describe the relationship between the design phase and the implementation phase in the Waterfall Model. [2 Marks]
- e. Identify two bottlenecks in the Waterfall Model's workflow. [2 Marks]
- f. Analyze any three limitations of using the Waterfall Model for large projects. [6 Marks]

QUESTION THREE (15 marks)

- a. Account for the Iterative Model in software engineering? [2 Mark]
- b. Explain why user feedback is essential in the Iterative Model. [3 Marks]
- c. When developing accounting software, identify any four modules that could be developed iteratively? [4 Marks]
- d. With three good reasons, analyse why the Iterative Model Is Suitable for Large-Scale ICT Projects [6 Marks]

QUESTION FOUR (15 marks)

- a. Explain what the Agile Model emphasize in software development? [1 Mark]
- b. Describe how Agile supports adaptive planning. [2 Marks]
- c. Illustrate why Agile Model is suitable for dynamic environments? [2 Marks]
- d. Analyze the cost implications of using the Agile Model. [2 Marks]
- e. Identify four key areas that shows how Agile promotes quality assurance. [8 Marks]

QUESTION FIVE (15 marks)

- a. Illustrate the Spiral Model in Software Engineering? [1 Mark]
- b. Explain why risk management is central to the Spiral Model. [2 Marks]
- c. Describe how the Spiral Model incorporates customer feedback. [3 Marks]
- d. Explain why the Spiral Model is considered both iterative and evolutionary? [1 Mark]
- e. Differentiate between inner and outer spirals in the Spiral Model. [2 Marks]
- f. Inadequate risk management in a Spiral Model project can lead to serious challenges that compromise the success, quality, and cost-effectiveness of the software. Discuss any three drawbacks of inadequate risk management in a Spiral Model Project. [6 Marks]

QUESTION SIX (15 marks)

- a. Identify three Software development models in Software Engineering. [3 Marks]
- b. Briefly discuss the six stages of the Software Development Life Cycle [12 Marks]