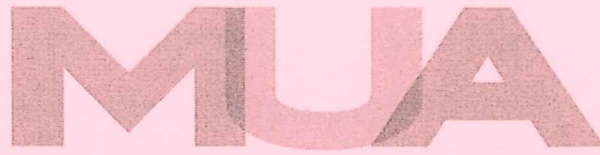


The
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DIPLOMA UNIVERSITY EXAMINATIONS

SCHOOL OF MANAGEMENT AND LEADERSHIP

DIPLOMA IN INFORMATION COMMUNICATION TECHNOLOGY

DIT 101 : INTRODUCTION TO SOFTWARE ENGINEERING

DATE: 4TH 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:

Case Study: The Agile Transformation at XYZ Software Solutions

XYZ Software Solutions is a mid-sized software development company that specializes in developing custom software solutions for various industries. In an effort to enhance their project management processes and increase customer satisfaction, XYZ Software Solutions decided to undergo an Agile transformation.

Agile is more than a set of processes or a box-ticking exercise to keep up with the competition – it's a state of mind. Despite what some consultants might tell you, transitioning to agile can't happen by following a cookie-cutter project plan. It requires an overhaul of your entire organisation – from its practices and tools to human interactions and even leadership style.

Required:

- a) Briefly explain what is meant by Agile transformation. [4 Marks]
- b) Discuss the benefits that XYZ would gain in the use of Agile software development. [10 Marks]
- c) State which phase in the Software Development Life Cycle (SDLC) focuses on gathering and documenting the project's requirements? [2 Marks]
- d) Based on the case study, propose a set of best practices for other companies planning to undertake a similar project. [5 Marks]
- e) Describe three major challenges that can arise during software maintenance, and provide strategies for addressing them. [9 Marks]

QUESTION TWO

- a) Define the term Software evolution and what it encompasses [4 Marks]
- b) Evaluate the need for software engineering, why it is essential? [6 Marks]

QUESTION THREE

- a) Evaluate the activities of the User Interface Design [5 Marks]
- b) Highlight five (5) things that improve user experience in a software [5 Marks]

QUESTION FOUR

- a) Define the term Software Project [2 Marks]
- b) Differentiate between the Waterfall Model and Iterative Model [4 Marks]
- c) In software engineering, the aspect of concurrency is usually very crucial.
Explain how it can be achieved [4 Marks]

QUESTION FIVE

- a) There are two aspects of software user interface design, CLI and GUI. Define the acronyms and with an example explain their usage. [5 Marks]
- b) Software Documentation is a critical component of the software development process. Explain what it means and list 3 types of documentation [5 Marks]

QUESTION SIX

- a) State 4 activities in software verification process. [4 Marks]
- b) Formulate 4 types of Maintenance based on their characteristics [4 Marks]
- c) Differentiate between software manual testing and automated testing. [2 Marks]

