

**UNIVERSITY COLLEGE TATI (UC TATI)****FINAL EXAMINATION QUESTION BOOKLET**

COURSE CODE	: DCT2133
COURSE	: SOFTWARE ENGINEERING TECHNIQUE
SEMESTER/SESSION	: 2-2023/2024
DURATION	: 3 HOURS

Instructions:

1. This booklet contains 5 questions. Answer ALL questions.
2. All answers should be written in answer booklet.
3. Write legibly and draw sketches wherever required.
4. If in doubt, raise your hands and ask the invigilator.

DO NOT OPEN THIS BOOKLET UNTIL YOU ARE TOLD TO DO SO

THIS BOOKLET CONTAINS 4 PRINTED PAGES INCLUDING COVER PAGE

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QUESTION 1

- a) Define the terms below: (6 marks)
- i. Software
 - ii. Software Engineering
 - iii. System Engineering
- b) Give **TWO (2)** reasons why software project fails. (4 marks)
- c) Compare between Plan Driven and Agile Process. (4 marks)
- d) Describe **THREE (3)** types of software process model. (6 marks)

QUESTION 2

- a) Give **FOUR (4)** characteristics of Software Architecture. (4 marks)
- b) Identify **FOUR (4)** Architectural Views to design System Architecture. (4 marks)
- c) State **FOUR (4)** types of Architectural patterns. (4 marks)
- d) Illustrate the comparison between Pipe and Filter, and Client and Server Architecture pattern. (8 marks)

QUESTION 3

- a) Give **THREE (3)** types of Unified Modelling Language (UML) diagram. (3 marks)
- b) Compare between Design and Implementation phases. (4 marks)
- c) Explain **THREE (3)** requirement elicitation techniques that can be use to gather information from stakeholders. (6 marks)

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QUESTION 4

- a) Consider an online shop for books. Differentiate between functional and non-functional requirements for each following statement:
- i. The system database shall accommodate a high number of books without any fault. (2 marks)
 - ii. The system shall allow the user to search for books by author and title. (2 marks)
 - iii. The system shall allow the user to view the book information. (2 marks)
 - iv. The system shall allow the user to view a list of all previously ordered books to the user. (2 marks)
 - v. The system shall support a minimum of 1000 transactions per hour. (2 marks)
 - vi. The system shall be available to all users 24/7. (2 marks)
 - vii. The system shall allow the user to remove books from the shopping cart at any moment. (2 marks)
- b) Draw a Use Case diagram for a Student Management System that has the following scopes:
- i. Admin: Manage Courses, Manage Students, Generate Reports (4 marks)
 - ii. Faculty: Mark Attendance, Grade Assignments, View Student Information (5 marks)
 - iii. Student: View Course Schedule, Check Grades, View Attendance (4 marks)

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QUESTION 5

Based on Figure 1 below, answer the following question:

New Registratio

Choose User Id Enter User ID

Password Enter Password

Confirm Password

Name

Email (Requires verification. Will not be published.)

Country

Please enter the verification number exactly as shown in left.

Figure 1

- a) Explain **FIVE (5)** defects from the interface. (10 marks)
- b) Give **ONE (1)** test scenario that are suitable for Figure 1. (2 marks)
- c) Give **FOUR (4)** test cases that can be use for testing the interface. (8 marks)

-----END OF QUESTION-----