

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

COURSE CODE	: DCT2133
COURSE	: SOFTWARE ENGINEERING TECHNIQUE
SEMESTER/SESSION	: 2-2022/2023
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

QUESTION 1

- a) Define the meaning of critical system with the example. (3 marks)
- b) Give **FOUR (4)** attributes of good quality software. (4 marks)
- c) Compare between Plan Driven and Agile Process. (4 marks)
- d) Give **THREE (3)** types of software process model. (3 marks)

QUESTION 2

- a) Explain **THREE (3)** reasons why software evaluation is important. (6 marks)
- b) Describe **FOUR** categories of legacy systems and the suggested organizational choices. (8 marks)
- c) Describe **FOUR (4)** types of Architectural patterns with the example of each. (8 marks)
- d) Identify the architecture patterns for the following system:
 - i. Amazon shopping application (2 marks)
 - ii. Flight information system (2 marks)
 - iii. File sharing application (2 marks)

QUESTION 3

- a) Describe **FOUR (4)** categories to measure software reliability testing with the examples of each. (8 marks)
- b) Classify the following scenarios into appropriate software reliability techniques:
 - i. An input that represents the temperature of a liquid water should be between 0 degrees Celsius and 100 degrees Celsius. (2 marks)

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- ii. The data represent the ages up to 10,000 people, then the program should declare an array with 10,000 locations to hold the age data. (2 marks)
- iii. In intensive system, the system will automatically save data every few minutes and, in the event of a system failure, it will restart with the most recently saved data. (2 marks)

QUESTION 4

- a) Consider an online shop for books. Classify if the following statements express functional or non-functional requirements.
 - i. The system database shall accommodate 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 minimum 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. There are two users, teacher and student that can access to the system. (4 marks)
 - ii. Teachers, and students can access to functionalities to check timetables, check grades, and check attendance. (6 marks)
 - iii. The access to functionalities updates attendance and update grades are only for Teachers. (4 marks)

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) As a software tester, show **FIVE (5)** defects on the interface. (10 marks)
- b) Produce **THREE (3)** possible test cases that you can use for testing the interface. (6 marks)

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