



UNIVERSITY COLLEGE TATI (UC TATI)

FINAL EXAMINATION QUESTION BOOKLET

COURSE CODE : BCS2433

COURSE : SOFTWARE ENGINEERING

SEMESTER/SESSION : 2-2024/2025

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) Describe **THREE (3)** important issues in professional responsibilities. (6 marks)
- b) Give **FOUR (4)** attributes of good software. (4 marks)
- c) Explain **FOUR (4)** basic activities of software process. (8 marks)
- d) Describe **ONE (1)** advantage of Waterfall Model in software development. (2 marks)

QUESTION 2

- a) List **FOUR (4)** techniques used to gather the system requirements. (4 marks)
- b) Compare **TWO (2)** differences between functional and non-functional requirements. (4 marks)
- c) Identify **TWO (2)** main stakeholders with their roles for UCTATI academic portal system. (4 marks)
- d) Produce **TWO (2)** functional and **TWO (2)** non-functional requirements for Restaurant Ordering System. (8 marks)

QUESTION 3

- a) Compare system error and system failure with example of each. (4 marks)
- b) Identify **FOUR (4)** factors that contribute to improved system reliability. (4 marks)

- c) Suggest the reliability metric and explain how the software below can achieve high reliability:
- i. A system that monitors patients in a hospital intensive care unit. (3 marks)
 - ii. An automated vending machine control system. (3 marks)
 - iii. A system to control braking in a car. (3 marks)
 - iv. A system to control a refrigeration unit (3 marks)

QUESTION 4

Based on Figure 1 below, answer the following question:

New Registration

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 Will not be published.)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.
1234

Figure 1: Registration Form

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

QUESTION 5

- a) Draw a sequence diagram that describes the main success scenario (10 marks) of the *withdraw money using a Visa card* use case.

- b) Refer the use case in Figure 2 below:

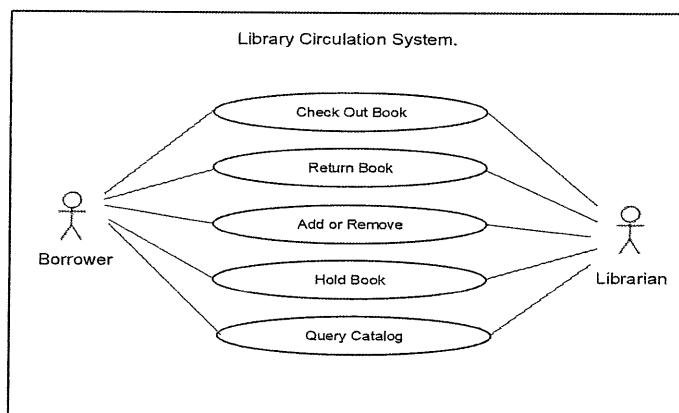


Figure 2: Use Case of Library Circulation System

- i. Explain the scenario regarding the Library Circulation System. (7 marks)

- ii. Suggest **ONE (1)** additional actor and **TWO (2)** functional (3 marks) requirements for Library Circulation System in Figure 2.

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