

Sri Sivasubramaniya Nadar College of Engineering, Kalavakkam – 603 110

(An Autonomous Institution, Affiliated to Anna University, Chennai)

Computer Science and Engineering

Continuous Assessment Test – III

Question Paper

Degree & Branch	B.E. CSE				Semester	6
Subject Code & Name	UCS1604 - Object Oriented Analysis and Design				Regulation:	2018
Academic Year	2021-2022	Batch	2019-2023	Date	6/6/2022	FN
Time: 8,30 to 10.00 am	Answer All Questions				Maximum: 50 Marks	

Part – A (6×2 = 12 Marks)

K2	1. Summarize the uses of design patterns.	CO4
K2	2. Compare Data driven and Responsibility driven design.	CO4
K2	3. Outline the importance of low coupling and high cohesion in any software system.	CO4
K2	4. Explain the phases of object modeling technique.	CO5
K1	5. Why UML supports integration testing?	CO5
K2	6. Illustrate the impact of object orientation in testing.	CO4

Part – B (3×6 = 18 Marks)

K3	<p>7. Make use of the following class diagram and map this design to code.</p> <pre> classDiagram class User { +id: int +name: string +age: string +username: string +password: string +create() +update() } class Librarian { +department: string +enableUser() +disableUser() } class Student { +course: string +year: string +browseBooks() } class Borrowing { +bookname: string +borrower: string +dateborrowed: string +datedue: string +create() +update() } class Transaction { +id: int +details: string +date: string +update() } class Books { +id: int +title: string +details: string +publisher: string +add() +update() } User < -- Librarian User < -- Student Librarian "0..*" -- "*" Transaction Student "1..3" -- "*" Borrowing Borrowing "1..*" -- "*" Books </pre>	CO4
K2	8. Explain the Object Oriented methodologies in detail.	CO5
K2	9. Demonstrate the behavioral Design Patterns with suitable examples.	CO4

Part – C (2×10 = 20 Marks)

K3	10. Explain the five fundamental GRASP principles. Apply all the GRASP principles for the following scenario of an online banking application. Clients may take money from their accounts, deposit money or ask for their current balance. All these operations are accomplished using either automatic teller machines (ATM) or counter tellers. Transactions on an account may be done by cheque, standing order or using the teller machine and card. There are two kinds of account: savings accounts and current accounts. Savings accounts give interest and cannot be accessed by the automatic tellers. When a cheque is deposited, it must be cleared before the funds can be used by the depositor.	CO4
(OR)		
K3	11. Identify appropriate structural design patterns for the following scenario to be used in the design of an online library management system (LMS). LMS will enable the members to borrow a book (or return it) with ease while sitting at his desk/chamber. The system also enables a member to extend the date of his borrowing if no other booking for that particular book has been made. For the library staff, this system aids them to easily handle day-to-day book transactions. The librarian, who has administrative privileges and complete control over the system, can enter a new record into the system when a new book has been purchased, or remove a record in case any book is taken off the shelf.	CO4
K3	12. Develop test cases (one success and one failure case) for the following use cases: a) Shopping cart holds the items till the session is active. As soon as a session is closed, the shopping cart should be refreshed. b) Shopping cart should not contain duplicate items, although user can add quantities of the product to be purchased. c) Users should be able to delete items from shopping cart and those deleted items should not be in the cart. d) Shopping cart should display all the products which the user wants to purchase. e) In case of any cross selling product, the customers are encouraged to buy cross selling product in addition to the original items they intend to purchase. f) In shopping cart, whether it is calculating the price correctly or not (The price of the cross selling product should be included). g) Check whether it is calculating the shipping charges, tax, packing price correctly. h) Check how many times the cross selling products are appearing in the cart. i) Check whether there are any special offers, if selected they also should be included in cart. j) Check whether the transaction is done properly or not.	CO5
(OR)		
K3	13. Develop test cases corresponding to one success and one failure scenario for the following use cases: a) User should be able to insert card and perform transactions b) ATM should authenticate user on the basis of the PIN entered c) Once authenticated, user should be able to do transactions, namely view account balance, deposit cash and withdraw cash d) User can only perform one transaction at any given time e) ATM customer chooses a type of account from which the cash is to be withdrawn f) The ATM verifies the availability of sufficient funds in the customer's bank account g) User checks the account balance after withdrawing the cash h) At the end of a transaction, appropriate messages should be displayed to the user to communicate the success/failure of the transaction i) At the end of a transaction, user should be able to start another transaction j) Card should be returned when the user exits	CO5