VIT

Vellore Institute of Technology
(Deemed to be University under section 3 of UGC Act, 1956)
CHENNAI

Reg. Number:

Continuous Assessment Test (CAT) – II - OCTOBER 2025

Programme	:	B. Tech Computer Sci Core	Semester	:	Fall 25-26
Course Code & Course Title	:	BCSE301L &Software Engineering	Class Number	:	CH2025260102452 CH2025260100690 CH2025260100688 CH2025260102449 CH2025260100691 CH2025260100689 CH2025260102454
Faculty	:	Dr.SATHYARAJASEKARAN K Dr.ALOK CHAUHAN Dr.JAYANTHI R Dr.PARKAVI K Dr.LAKSHMI HARIKA PALIVELA Dr.BERIN SHALU S Dr.ELAKYA R	Slot	:	E1+TE1
Duration	:	90 Minutes	Max. Mark		50

General Instructions: < Use this space to provide additional information such as graph sheet, data book, etc.>

- Write only your registration number on the question paper in the box provided, and do not write other information
- Use statistical tables supplied from the exam cell as necessary
- Use graph sheets supplied from the exam cell as necessary
- Only a non-programmable calculator without storage is permitted

Answer all questions

Q. No	Sub Sec.	Description	Marks	Module No.	Level	HoT?	CO	BT Level
1	a) b)	A mid-sized retail company wants to replace its manual spreadsheets and logs with an Auto Inventory Management System (AIMS). The existing method results in frequent mistakes, slow stock updates, poor demand forecasting, and weak decision-making. Provide a high-level overview of AIMS's business goals and detail the steps implemented to achievethe proposed method. (5 Marks) Design a change management and traceability feature for an Auto Inventory Management System (5 Marks)	10	3	Easy	Yes	CO1	Apply
2		An Automated Bakery Kiosk Management System (ABKMS) sells freshly baked snacks like cookies,	10	4	Avg	Yes	CO2	Analyze

		muffins, and croissants. Customers browse the menu on a touchscreen, place an order, and make a payment. The kiosk displays the preparation time and provides a printed token. Once the item is baked, it notifies the customer for pickup.						
	a)	Design a modular software architecture for the Bakery Kiosk and ensure high cohesion and low coupling for the ABKMS. (5 Marks)						
	b)	Analyse how abstraction can simplify the design of the ABKMSfrom both the customer's and the service staff's perspectives. (5 Marks)						
3		The Parking Lot Management System (PLMS) manages a multi-level parking building,basements B2–B5. It automates entry and exits through sensors and ticket dispensers, issuing tickets with vehicle details captured via Automatic Number Plate Recognition. (ANPR). The system shows real-time parking availability on digital boards and uses LED indicators to guide drivers to free spaces. Payments are made at exit using cash, card, or mobile app. Security staff can monitor and override gates when needed. The system also generates usage reports daily, weekly, and monthly for administrators.	10	4	Hard	Yes	CO1	Apply
	a)	Draw the Context Level 0 Data Flow Diagram (DFD) for the PLMS. (3 Marks)						
	b)	Develop a transaction map from DFD to a State chart for Parking functions described in the scenario (7 Marks)						
4		Indian Airlines aims to develop a ticketing and reservation system that will handle ticket booking, cancellations, rescheduling, and class changes. These services will be managed by a Reservation Clerk. Additionally, the system will provide a query feature to check flight schedules, fares, and seat availability, and offer a cargo service for passengers.	10	5	Easy	Yes	CO3	Evaluate
	a)	Create a test plan by identifying five use cases for Indian Airlines within a structured template. (5 Marks)						
	b)	Detail various regression testing techniques applicable to Indian Airlines and how they would be implemented. (5 Marks).						
5		Drive-in is the leading brand for self-drive car rentals across various locations. They aim to design and develop an application that provides a convenient and flexible rental service platform for users.	10	5	Avg	Yes	CO2	Analyse
	a)	Using mutation testing for Drive-in, identify						

	b)	defects and embed the decision logic, value-based partitions with boundaries, and statement/branch checks. (6 Marks) List four types of web-based testing to test in Drive-in's web application to ensure a smooth user experience. (4 Marks)						

**********All the best **********

6/10/2025

Faculty Signature