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

Continuous Assessment Test (CAT) – I AUGUST 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 non-programmable calculator without storage is permitted

Answer all questions

Q. No	Sub Sec.	Description	Marks	CO	BT Level
1		The Public Works Department (PWD) aims to create a unified portal that will enable citizens across Tamil Nadu to file complaints related to their respective districts. The system will authenticate users using Aadhaar card details before complaint registration. While experts recommend utilizing the Waterfall Model of Software Development Life Cycle (SDLC) for its structured approach, you, as the Project Manager, prefer the iterative and flexible approach provided by the Agile Model.	10	CO1	Apply
	a)	Conduct a detailed analysis and justify your decision to adopt the Agile Model over the Waterfall Model for the PWD project. (5 Marks)			
	b)	Compare and contrast both models in terms of their adaptability to changing requirements, risk management, and iterative delivery, considering the scope, complexity, and potential challenges in the development of the system. (5 Marks)			
2	a)	TechTrend Innovations is developing a CRM system for a retail client			Analyze

		with a 3-month initial release deadline, requiring frequent updates, high-quality code, and continuous delivery. The team has faced miscommunication, delayed feedback, and rework in past projects. Discuss how Extreme Programming (XP) practices can be applied to this project to address these challenges. In your answer, explain at XP phases and analyze their role in improving communication, reducing rework, and ensuring timely delivery with a neat diagram. (6 Marks)	10	CO1	
	b)	List and briefly explain two Scrum activities that could be applied in TechTrend Innovations. (4 Marks)			
3	a)	John is the project documents controller for a Telecom Network Deployment (TND) project that involves developing software for network management. He is tasked with creating a Work Breakdown Structure (WBS) for the software development phase of the project that includes the following major deliverables: Requirements Gathering, Software Design, Coding, Testing, Deployment, and Stakeholder Communication. Break each delivery down into specific tasks and subtasks to ensure a clear and manageable structure for the TND project. (6 Marks)	10	CO1	Analyze
	b)	Identify at least four major milestones for the software development phase of a Telecom Network Deployment Project to ensure the project remains on track. (4 Marks)			
4		Calculate the function point, productivity, documentation, and cost per function for a Hospital Management Software System (HMSS) with multiple Processing Factors: 3, 2, 5, 1, 0, 4, 2, 3, 4, 5, 2, 1, 3.	10	CO2	Evaluate
		Number of EI (Avg) — 18 Number of EO (High) — 08 Number of EQ (Low) — 12 Number of ILF (High) — 04 Number of EIF (Avg) — 03 Effort — 42 person-months Software technical documents — 280 pages User-related documents — 150 pages Budgeting/Cost — $8,100 per month			
	a)	From the above given data, Calculate the Unadjusted Function Points (UFP). (2 marks)			
	b)	Calculate Value Adjustment Factor (VAF). (2 marks)			
	c)	Calculate Adjusted Function Points (AFP). (2 marks)			
	d)	Calculate Productivity, Documentation Size per AFP, and Cost per FP. (4 marks)			
5		An Online Food Delivery System mobile app is being developed to allow users to browse menus, place orders, make secure payments, and track deliveries in real-time. The app includes distinct user profiles for customers, delivery personnel, restaurant managers, and system administrators. It supports personalized recommendations, scheduled orders, and handles sensitive data like payment details and personal addresses. Ensuring security and role-based access control is critical.	10	CO3	Analyze

	a)	Identify the Functional and Non-Functional Requirements for the above system and represent them using a suitable Software Requirement Specification (SRS) template. (5 Marks)			
	b)	Explain how you would engage different stakeholders (e.g., customers, delivery staff, restaurant owners, developers, payment gateway providers) in the Requirements Engineering process for the Online Food Delivery System mobile app. (5 Marks)			

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