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 (all specializations)	Semester	:	Fall Semester 2025-26
Course Code & Course Title	:	BCSE301L Software Engineering	Class Number	:	CH2025260101331 CH2025260101457 CH2025260101458 CH2025260101608 CH2025260101612 CH2025260101616 CH2025260102105 CH2025260102106 CH2025260102107 CH2025260102108 CH2025260102109
Faculty	:	Dr. SRISAKTHI SARAVANAN Dr. ILAVARASI A K Dr. SOFTYA SEBASTIAN Dr. PRAVEEN JOE I R Dr. SMRITHY G S Dr. DHAVAKUMAR P Dr. KAVITHA D Dr. SHERLY A Dr. BRINDHA S Dr. RAMA PRABHA K P Dr. KUMARAN K	Slot	:	F2+TF2
Duration	:	1 hour and 30 minutes	Max. Mark		50

General Instructions:

- Write only your registration number on the question paper in the box provided and do not write other information

Answer all questions

Q. No	Sub Sec.	Description	Marks	CO	BT Level
1		Your Scrum team is building an e-learning app. A backlog item says: *"As a student, I want to download course videos to watch offline."* In sprint planning, the team finds it too large for one sprint. In sprint review, a stakeholder adds a compliance need — videos must expire after 30 days, which was not included in the original acceptance criteria.			
		a) Illustrate from the above scenario as a Product owner, outline the strategies to incorporate the new compliance to ensure flexibility and effective prioritization in agile requirement management. (5 marks)	10	CO3	Apply

		b) Enumerate the validation techniques you would apply to ensure that the "video download" feature meets both functional and compliance needs before release. (5 marks)			
2		"Zoop," an online ticket booking system, lets customers search routes, book seats, pay online and get e-tickets. The system checks availability, processes payments, updates reservations and sends confirmations. Admins can cancel trips, update schedules and view reports. a) Select suitable architecture mapping technique with justification to convert the DFD into architecture. (2 marks) b) Apply chosen architecture mapping to convert the DFD into appropriate architecture style with detailed steps and illustration as required. (8 marks)	10	CO3	Apply
3		Novamed a healthcare technology company is developing a smart real-time patient monitoring system that collects vital signs from wearable devices, processes the data continuously and alerts doctors when abnormalities occur. The system must ensure scalability, security, interoperability with hospital systems and high reliability for uninterrupted patient care. a) Demonstrate modularization techniques for the smart monitoring system. (8 marks) b) Highlight both best-case and worst-case approaches from modularization technique for above scenario with suitable justification. (2 marks)	10	CO4	Analyze
		A large e-commerce platform is frequently updated with new features, offers and UI changes. The development team wants to ensure that these updates do not introduce errors or affect existing functionality at the time of software release. You are tasked with designing and maintaining the platform quality for the continuous release. a) Identify appropriate software testing strategy suitable for this scenario (2 marks) b) Explain the different testing types in the above identified test strategy and show the release process for this scenario. (8 marks)	10	CO4	Evaluate
		An online insurance claim system determines eligibility based on claim type, amount and policy status. Claims under $10,000 are auto-approved if the policy is active. Claims			

		between $10,000 –$50,000 are auto-approved for accidents with no prior claims in a year; others go for manual review. Claims over $50,000 or with expired policies are rejected. a) Develop a simple program (in C/Python) that implements the claim approval logic and construct a Control Flow Graph (CFG) for the program to visually represent decision paths. (5 Marks) b) Apply Basis Path Testing to derive independent test cases that ensure full path coverage, including edge cases and compute the Cyclomatic Complexity. (5 Marks)	10	CO5	Evaluate

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